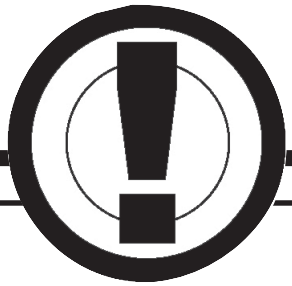


NOTICE:

This standard contains numerous changes and deletions from the previous revision, as well as new requirements. Do not make any assumptions as to the context of the document. This standard should be carefully read prior to ordering a vehicle and its options, submitting an offer, building a vehicle, or conducting an inspection.

Further, to maintain the integrity of contracts, the past practice of underscoring changes has been discontinued because it is impractical to show all changes, deletions, etc. The contract must stand on the substance of the document as written.

THIS PAGE INTENTIONALLY LEFT BLANK

794 TRUCKS AND TRUCK TRACTORS: Medium Commercial 4X2 & 4X4, 9,500 to 16,000 KG (21,000 to 35,000 LBS) GVW

Federal Standard Number 794V, July 1, 2002
Superseding Federal Standard Number 794U, July 1, 2001

▶ 1. PURPOSE, APPLICATION AND COVERAGE

1.1 PURPOSE.

This document covers new commercially produced, four wheeled, two and four wheel drive (4x2 & 4x4) medium trucks. It is intended to simplify competitive procurement of commercial vehicles, and achieve a practical degree of standardization within the federal fleet.

1.2 APPLICATION.

This Federal Standard does not include all the varieties of the commodity indicated by the title but is intended to cover only those vehicles generally acquired by the Government. This standard highlights, in concise form, types of trucks with standardized components and equipment. A selection of coded optional additional systems and equipment is included for agencies, divergent geographic and operational related needs. Vehicles must meet the integrated requirements of the tables, the schedule, and the detailed paragraphs (see section 3). The requirements of the standard may be tailored to meet unusual operating conditions, to incorporate special purpose equipment, and to provide for exceptions not otherwise covered.

These trucks are warranted by the contractor/supplier upon delivery as specified under 6.5 of the specification. Vehicle procurement must comply with the Federal Property Management Regulations (FPMR) and the Federal Procurement Regulations. (FPR).

1.3 COVERAGE OF TRUCK TYPES.

The vehicles covered by this standard are listed below. A list for additional optional equipment appears after each table. For Type V, Truck, wrecker, see WARRAN program brochures. For type VI, truck, maintenance, see also SADI program brochure for aerial devices and digger derricks. For Type IX, Truck forward control, Multistop, see MIL-T-62318.

TYPES	VEHICLE (Model or Style)	TABLE NO.	PAGE NO.
I	Chassis, truck, with cab	1	8-11
II	Truck, tractor, with cab	2	12-15
III	Truck, stake, with cab	3	16-19
IV	Truck, dump, with cab	4	20-23
V	Truck, wrecker, with cab	Reserved	Reserved
VI	Truck, maintenance/line body, with cab	6	24-27
VII	Truck, van, with cab	7	28
VIII	Truck, refrigerator van, with cab	8	29-31
IX	Chassis, truck, forward control	Reserved	Reserved

1.4 CLASSIFICATION.

The vehicle(s) are divided into "Types" and "Classes." The vehicle types are determined by the chassis/body configuration (see figure illustrations on tables). The "Class" of vehicle(s) shall be determined by the minimum gross vehicle weight rating (GVWR) as follows:

CLASS	C	D	E	F	G
(KG)	9,500	11,500	12,700	14,500	15,900
(LBS)	21,000	25,500	28,000	32,000	35,000

1.5 REPRESENTATIVE MODELS.

Representative chassis models are indicated in Chart A. The figures under each table in section 3 illustrate the typical style of the trucks covered in that type.

1.6 STANDARD TRUCK AND ALTERNATE COMPONENTS.

The standard truck shown as a "numbered item" and components listed in the tables are minimum requirements and equipment acceptable. The components designated "STD" shall be furnished in accordance with the referenced specification. A selection of alternate options and equipment is listed at the end of each table with "codes" applicable to the specific type/style truck. These shall be furnished when the code(s) are specified. NOTE: Payload is reduced by the weight of options specified such as lift gates, winch, snow plow, increased body size, and other equipment not included in the Standard Item.

NOTICE: ALTERNATIVE FUEL VEHICLE AVAILABILITY IS LISTED ON PAGE NO. 7

CHART A Representative Models

MANUFACTURER ENGINE						
CLASS		**C**	**D**	**E**	**F**	**G**
GVWR KG		**9,500**	**11,500**	**12,700**	**14,500**	**15,900**
GVWR LB		**21,000**	**25,500**	**28,000**	**32,000**	**35,000**
Conventional Cab						
Sterling	Diesel	6500 Series	7500 Series	7500 Series	7500 Series	8500 Series
Ford (includes crew cab)	Diesel	F650	F650	F750	F750	F750
GMC (includes crew cab)	Diesel, Gas	C6500	C7500	C7500	C7500/ C8500	
International (includes crew cab)	Diesel	4000	4000	4000/ 7000	4000/ 7000	7000
Freightliner (includes crew cab)	Diesel	FL50/ FL60/FL70	FL70	FL70	FL70/FL80	FL106
Volvo	Diesel	-	-	VN42/VHD42 RD	VN42/VHD42 RD	VN42/VHD42 RD
Mack	Diesel	-	-			
Tilt Cab						
GMC	Diesel	T6500	T7500	T7500	T7500	
Autocar	Diesel	-	-	WX42	WX42	WX42
Mack	Diesel	-	MR	MR	-	-
Freightliner	Diesel	-	FC	FC	FC	FC/Condor
Sterling	Diesel	-	SC	SC	SC	SC/Condor

2. REFERENCED DOCUMENTS

2.1 ISSUES OF DOCUMENTS.

The following documents of the issue in effect on date of invitation for bids or request for proposal form a part of this standard to the extent specified herein.

Fed. Std. No. 595B -Colors.

Federal standards and specifications are available from:

GSA Specification Section
Suite 8100
470 L'Enfant Plaza, S.W
Washington, D.C. 20407
Telephone: (202) 619-8925.

Copies of this standard are available by writing to :

General Services Administration
Centralized Mailing List Service (7CAFL)
P.O. Box 6477
Fort Worth, TX 76115
Telephone (817) 334-5215 FAX: (817) 334-5227

Request AUTO-0001.

Copies of this standard are available from the General Services Administration, Office of Vehicle Acquisition and Leasing Services, GSA Automotive homepage: fss.gsa.gov/ vehicles/buying. Copies are also available on CD-ROM from the GSA Automotive Division. Contact Customer CARE at 703-308-CARS(2277).

2.1.1 SPECIFICATIONS, STANDARDS, AND HANDBOOKS.

The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those listed in the issue of the Department of Defense Index of Specifications and Standards (DODISS) and supplement thereto, in effect on date of solicitation.

COMMERCIAL ITEM DESCRIPTIONS

A-A-55439……...Battery, Storage: Vehicular, Ignition, Lighting and Starting

A-A-52557……Fuel Oil, Diesel

A-A-50271……....Plate, Identification, instruction and marking

A-A-52550……....Pintle Assembly, Towing: 40,000 lbs. Capacity, Manual Release.

HANDBOOKS

MIL-HDBK–1223..Nontactical Wheeled Vehicles Treatment,

Painting, Identification Marking, and Data Plate Standard.

MIL-HDBK–1791.. Designing for Internal Aerial Delivery in Fixed Wing Aircraft

DH-1-11 ..... AFSC Design Handbook.

SPECIFICATIONS

Military

MIL-T-5624 ..... Turbine Fuel, Aviation, Grades JP - 4 and JP-5.

MIL-T-83133 .... Turbine Fuel, Aviation, Kerosene Type, Grade JP-8.

MIL-T-62318.....Truck, Multistop, Deliver: Forward Control and Chassis

MIL-PRE-20696.Cloth, Waterproof, Weather Resistant

STANDARDS

Federal

FED-STD-297 ..... Rustproofing of Commercial (Nontactical) Vehicles.

Military

MIL-STD-209…. Lifting and Tiedown Provisions

MS 75020 ..... Connector, Plug, Electrical - 12 Contact, Intervehicular, 28-Volt, Waterproof.

MS 75021 ..... Connector, Receptacle, Electrical - 12 Contact, Intervehicular, 28-Volt, Waterproof.

(Unless otherwise indicated, copies of federal and military specifications, standards, and handbooks are available from the Naval Publications and Forms Center, Military Specifications and Standard, Bldg. 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094).

2.1.2 OTHER GOVERNMENT DOCUMENTS, DRAWINGS, AND PUBLICATIONS.

The following other Government document, drawings, and publications form a part of this specification to the extent specified herein. Unless otherwise specified, the issues are those in effect on date of solicitation.

Department of Transportation (DOT)

Federal Motor Carrier Safety Regulations.

Federal Motor Vehicle Safety Standards.

(Application for copies of DOT publications should reference the Code of Federal Regulations, 49 CFR, and the Federal Register, and should be addressed to the Superintendent of Documents, U.S. Government Print Office, Washington, DC 20402.)

Environmental Protection Agency (EPA)

Control of Air Pollution from New Motor Vehicles and New Motor Vehicle Engines.

Noise Emission Standards for Transportation Equipment - Medium and Heavy Trucks.

(Application for copies of EPA publications should reference the Code of Federal Regulations, 40 CFR, and the Federal Register and should be addressed to the Superintendent of Documents, U.S. Government Print Office, Washington, DC 20402.)

Occupational Safety and Health Administration (OSHA)

Subpart N Cranes, Derricks, Hoists, Elevators, and Conveyors.

(Application for copies of OSHA publications should reference the Cod of Federal Regulations, 29 CFR, and the Federal Register and should be addressed to the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.)

2.2 NON-GOVERNMENT PUBLICATIONS.

The following documents form a part of this document to the extent specified herein. Unless otherwise specified, the issued of the documents which are DOD adopted are those listed in the issue of the DODISS specified in the solicitation. Unless otherwise specified, the issues of documents not listed in the DODISS are the issues of the documents in effect on the date of solicitation.

The European Tyre and Rim Technical Organization (ETRTO)

Standards Manual

(Application for copies of the ETRTO publication should be addressed to the European Tyre and Rim Technical Organizations, 32, Avenue Brugman, 1060 Brussels, Belgium.)

National Bureau of Standards

U.S. Product Standard PS 1-83 for Construction and Industrial Plywood

(Applications for copies of National Bureau of Standards publications should be addressed to the National Center for Standards and Certification Department of Commerce, Administration Building, Room A-633, Gaithersburg, MD 20899.)

National Fire Protection Association (NFPA)

NFPA No. 70 National Electric Code.

(Application for copies of NFPA publications should be addressed to the National Fire Association, Batterymarch Park, Quincy, MA 02269.)

National Truck Equipment Association (NTEA)

Conversion Hoist Chart.

Dump Body Hoist Chart.

(Application for copies of NTEA publications should be addressed to the National Truck Equipment Association, 38705 Seven Mile Road, Suite 345, Livonia, MI 48152.)

SAE, INC.

SAE Standards and Recommended Practices

J318 ..... Air Brake Gladhand Service (Control) and Emergency (Supply) Line Couplers - Trucks, Truck-Tractors, and Trailers (DOD adopted).

J350 ..... Spark Arrester Test Procedure for Medium Size Engines (DOD adopted).

J516 ..... Hydraulic Hose Fittings.

J517 ..... Hydraulic Hose.

J537 ..... Storage Batteries.

J551 ..... Performance Levels and Methods Measurement of Electromagnetic Radiation from Vehicles and Devices (30-1000 MHz).

J560 ..... Seven-Conductor Electrical Connector for Truck-Trailer Jumper Cable.

J682 ..... Rear Wheel Splash and Stone Throw Protection (DOD adopted).

J683 ..... Tire Chain Clearance - Trucks, Buses, and Combinations of Vehicles.

J700 ..... Upper Coupler Kingpin - Commercial Trailers and Semitrailers.

J704 ..... Openings for Six- and Eight-Bolt Truck Transmission Mounted Power Take-Offs.

J844 ..... Nonmetallic Air Brake System Tubing (DOD adopted).

J931 ..... Hydraulic Power Circuit Filtration.

994 ..... Alarm- Backup- Electric.

J1067 ..... Seven-Conductor Jacketed Cable for Truck-Trailer Connections.

J1349 ..... Engine Net Power Test Code - Spark Ignition and Diesel.

J1995 ..... Engine Gross Power Test Code.

J2188 ..... Truck Ability Prediction Procedure (DOD adopted).

(Application for copies of SAE publication should be addressed to SAE, Inc., 400 Commonwealth Drive, Warrendale, PA 15096.)

The Tire and Rim Association, Inc.

Year Book.

(Application for copies of Tire and Rim Association publication should be addressed to the Tire and Rim Association, Inc., 175 Montrose West Avenue, Copley, OH 44321.)

The Maintenance Council (TMC).

Recommended Maintenance Practices Manual.

RP 105B ..... Battery Cable Assemblies.

RP 109A Battery Ratings and Engine Cranking Requirements

RP 110A Low Tension Cable For Heavy Duty Truck-Tractor Wiring Systems.

RP 111B ..... Circuit Protections

RP 112 ..... Terminals For Heavy Duty Truck-Tractor Primary Wiring Systems.

RP 113A ..... Electrical Systems Connectors.

RP 114A ..... Harness Protection.

RP 118A ..... Turn Signal Switches.

RP 120A ..... Wiring Systems Identification.

RP 137 ..... Antilock electrical supply for tractors through SAE J560 seven pin connector.

RP 138 ..... Auxiliary forward lighting.

RP 303B ..... Silicone hoses and hose assemblies.

RP 321 ..... Fuel Crossover Line Protection and Configuration Guidelines.

RP 325 Radiator Integrity For Highway Trucks.

RP 403 ..... Placement of Safety Equipment.

RP 404B ..... Truck and Tractor Access System

RP 417 ..... Supporting pneumatic electrical lines between cab and trailer.

RP 418 ..... Heavy-duty, in-cab R134A air conditioning systems.

RP 624 ..... Synthetic Lubricants.

RP 637 Air Dryer Guidlines.

RP 710 ..... Overhead door selection.

RP 711 ..... 12 year life swing - type freight van, trailer doors.

(Applications for copies of TMC publications should be addressed to the Maintenance Council, American Trucking Associations, 2200 Mill Road, Alexandria, VA 22314-5388.)

2.3 ORDER OF PRECEDENCE.

In the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specified exemption has been obtained.

2.4 ABBREVIATIONS AND DEFINITIONS.

Following are the abbreviations or contractions and their meanings as they appear and are used in this standard:

ABBREVIATIONS	DEFINITIONS
AMP	AMPERE
AT	ALL TERRAIN TIRES
AUX	AUXILIARY
BAT	BATTERY
CAP	CAPACITY
CM	CENTIMETERS
CYL	CYLINDERS
DIA	DIAMETER (IN INCHES)
FC	FORWARD CONTROL
FT	FOOT OR FEET
FRT	FRONT
GAS	GASOLINE
GAWR	GROSS AXLE WEIGHT RATING
GCWR	GROSS COMBINED WEIGHT RATING
GHP	GROSS HORSEPOWER
GVWR	GROSS VEHICLE WEIGHT RATING
H.D.	HEAVY DUTY
H.D.A.	HEAVIEST DUTY AVAILABLE
HWY	HIGHWAY
HYD	HYDRAULIC
IN	INCHES
KG	KILOGRAMS
L	LITERS
LBS	POUNDS
M	METERS
MAN	MANUAL
MAX	MAXIMUM
MFR	MANUFACTURER'S
MIN	MINIMUM
MPG	MILES PER GALLON
MSPC	MFR. STD. PAINT COLOR
N/A	NOT APPLICABLE OR NOT AVAILABLE
NHP	NET HORSEPOWER
OEM	ORIGINAL EQUIPMENT MANUFACTURER'S
OO	ON-OFF ROAD TIRES
OPT	OPTION, OPTIONAL
PASS	PASSENGERS
PTO	POWER TAKEOFF OPENING
RAD	RADIAL
RBM	RESISTING BENDING MOMENT
SPD	SPEED

ABBREVIATIONS	DEFINITIONS
STD	STANDARD (SPECIFICATIONS)
V	V-TYPE (ENGINE)
W/, & W/O	WITH, AND WITHOUT
-	NOT REQUIRED, OPTION OFFERED
/	AND
3.	SELECTION AND REQUIREMENTS

ALTERNATIVE FUEL VEHICLES AVAILABLE ON FED. STD. 794V

MANUFACTURER	FUEL TYPE	STANDARD ITEM NO.
FREIGHTLINER	CNG	ALL STANDARD ITEM NOS.
GMC	LPG	ALL STANDARD ITEM NOS.
AUTOCAR	CNGD	TO 300 HP

▶ 3. SELECTION AND REQUIREMENTS
Charts begin on page 8

TABLE 1

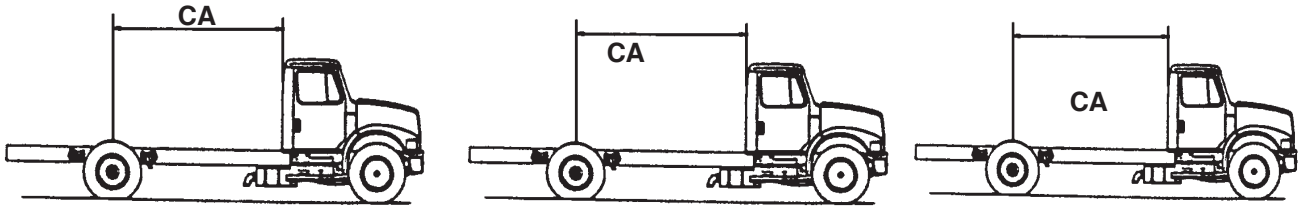
4X2 CHASSIS, TRUCK WITH CAB, 2 OR 4 DOOR (see paragraph 3.5.1)

ITEM NO.	414	511	512	513	514
MINIMUM REQUIREMENTS					
TYPE/CLASS	I/C	I/D	I/E	I/F	I/G
PAYLOAD (APPROX. W/ OUT BODY) Kg (LBS)	6,100(13,000)	7,900(16,000)	8,900(17,000)	10,500(22,000)	11,300(24,000)
Style, cab/tilt hood	#Conv. 2 dr.#	#Conv. 2 dr.#	#Conv. 2 dr.#	#Conv. 2 dr.#	Conv. 2 dr.#
GVWR/GCWR, lbs	21000/30000	25500/43000	28000/45000	32000/55000	35000/60000
Curb weight, approx. base, kg (lbs)	3,400 (8000)	3,600 (10,000)	3,800 (10,200)	4,000 (10,500)	4,500 (11,000)
Axle, min frt rating, lbs/seals	6000/oil	8000/oil	9000/oil1	11000/oil2	12000/oil
Axle, min rear rating, lbs/spd/seals	15000/ 1 spd*/oil	17500/ 1 spd*/oil	19000/1 1 spd*/oil	21000/2 1 spd*/oil	23000/ 1 spd*/oil
Suspension, frt/rear, min, lbs	6000/15000	8000/17500	9000/190001	11000/210002	12000/23000
Cab to axle (CA)	optional#	optional#	optional#	optional#	optional#
Frame, RBM, min, in- lb	440,000#	475,000#	620,000#	800,000#	1,600,000
Engine, type	*diesel	*diesel	*diesel	*diesel	diesel
Engine CYL/GHP/gross torque, min.	*6-8/175/420 turbo	*6-8/190/485 turbo	6-8/205/520 turbo	*6-8/210/605 turbo	*4-6/300/1050 turbo
Transmission type/speeds, min.	*auto/4 spd	*auto/4 spd	*auto/4 spd	*auto/4 spd	*manual/9 spd
Clutch, size	-	-	-	-	H.D.A
Differential	*std	*std	*std	*std.	*std
Brakes, type	hyd/power	full air	full air	full air	full air
Steering	power	power	power	power	power
Springs/shocks	aux rear/ front shocks	aux rear/ front shocks	front shocks	front shocks	front shocks
Wheels, type w/ dual rear	*disc	*disc	*disc	*disc	*disc
Tires, tubeless/min cap/tread (std.)	9R22.5F/ hwy*	10R22.5F/ hwy*	10R22.5F/1 hwy*	11R22.5G//2 hwy*	11R22.5G/ hwy*
Alternator, rating cap., min	*130 amp	*130 amp	*130 amp	*130 amp	*130 amp
Battery, CCA @ 0°F/reserve/diesel	1875/ 540 min	1875/ 540 min	1875/ 540 min	1875/ 540 min	1875/ 540 min
Battery, CCA @ 0°F/reserve/gas	535/115 min	535/115 min	535/115 min	535/115 min	-
Cooling and indicators	H.D.A.	H.D.A.	H.D.A.	H.D.A.	H.D.A
Exhaust, type	horizontal	horizontal	horizontal	horizontal	horizontal
Fuel tank, capacity, L (gal)	*170 (45)	*170 (45)	*170 (45)	*170 (45)	*170 (45)
Mirrors, dual	flat & convex	flat & convex	flat & convex	flat & convex	flat & convex
Horn	electric	electric & air	electric & air	electric & air	electric & air
Body	-	-	-	-	-

NOTES: * Indicates option available. # Indicates alternate available below:

1. Class E alternate minimum axle and suspension rating, front/rear, LB - 8000/21000 - Tires, min 11R22.5G
2. Class F alternate minimum axle and suspension rating, front/rear, LB - 10000/23000 - Tires, min 11R22.5H rear/G front
3. Extended warranty coverage may be available on these vehicles. Refer to new vehicle guide warranty section.

Standard equipment includes: Coolant recovery; front towing devices; fan clutch, AM/FM radio; power takeoff opening at transmission; seatbelts, cab heater and defroster; tachometer (if diesel); electric power point, tinted glass, dual cab entry assist handles, gauges, predelivery serviced, engine shutdown (if Diesel), daytime running lights, anti-lock brake system on air brake vehicles, hub piloted wheels, air conditioning, remote jump start posts, electronic controlled engine and throttle control, (if diesel).



(CA) CAB to AXLE Dimension Must Be Specified - See Options Codes CA1-CA8

Special or Additional CA dimensions may be specified, if required.

See Option Codes Listing on pages 10 and 11.

TABLE 1

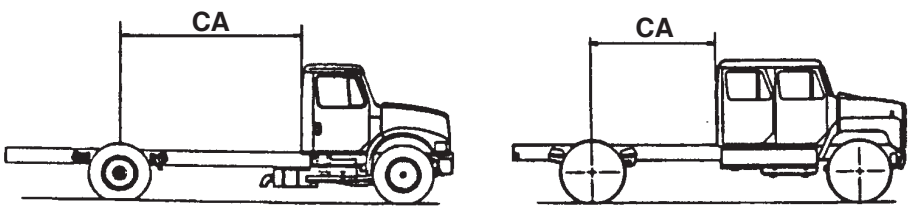
4X4 CHASSIS, TRUCK WITH CAB, 2 OR 4 DOOR (see paragraph 3.5.1)

ITEM NO.	712	713	714	715
MINIMUM REQUIREMENTS				
TYPE/CLASS	**I/D**	**I/E**	**I/F**	**I/G**
PAYLOAD (APPROX. W/OUT BODY) Kg (LBS)	**7400 (16,500)**	**8,400** (18,000)	**10,000** (21,000)	**10,900 (22,000)**
Style, cab/tilt hood	#Conv. 2 dr.#	#Conv. 2 dr.#	#Conv. 2 dr.#	#Conv. 2 dr.#
GVWR/GCWR, lbs	25500/43000	28000/45000	32000/55000	35000/60000
Curb weight, approx. base, kg (lbs)	4,100/(9300)	4,300 (9500)	4,500 (10000)	4,900 (13,000)
Axle, min frt rating, lbs/seals	8000/grease	9000/grease	12000/grease/oil	12000/grease/oil
Axle, min rear rating, lbs/spd/seals	17500/1 spd/oil	19000/1 spd/oil	21000/1 spd/oil	23000/1 spd/oil
Suspension, frt/rear, min, lbs	8000/17500	9000/19000	12000/21000	12000/23000
Cab to axle (CA)	optional#	optional#	optional#	optional#
Frame, RBM, min, in-lb.	620,000#	620,000#	800,000#	1,600,000
Engine, type	*diesel	*diesel	*diesel	diesel
Engine CYL/GHP/gross torque, min.	6-8/205/520 turbo	6-8/205/520 turbo	*6-8/210/605 turbo	4-6/300/1050
Transmission type/speeds, min.	*auto/4 spd	*auto/4 spd	*auto/4 spd	manual/ 9 spd
Clutch, size	-	-	-	H.D.A.
Differential	*std	*std	*std	*std
Brakes, type	full air	full air	full air	full air
Steering	power	power	power	power
Springs/shocks	front shocks	front shocks	front shocks	front shocks
Wheels, type w/ dual rear	*disc	* disc	* disc	*disc
Tires, tubeless/min cap/tread (std.)	10R22.5F/AT-OO	10R22.5F/AT-OO	11R22.5G/AT-OO	11R22.5H/AT-OO
Alternator, rating cap., min	*130 amp	*130 amp	*130 amp	*130 amp
Battery, CCA @ 0°F/reserve/diesel	1875/540 min	1875/540 min	1875/540	1875/540
Battery, CCA @ 0°F/reserve/gas	535/115 min	535/115 min	535/115 min	-
Cooling and indicators	H.D.A.	H.D.A.	H.D.A.	H.D.A.
Exhaust, type	horizontal	horizontal	horizontal	horizontal
Fuel tank, capacity, L (gal)	*(170) 45	*(170) 45	*170 (45)	*170 (45)
Mirrors, dual	flat and convex	flat and convex	flat and convex	flat & convex
Horn	electric & air	electric & air	electric & air	electric & air
Body	-	-	-	-

NOTES: * Indicates option available. # Indicates alternate available below:

Extended warranty coverage may be available on these vehicles. Refer to new vehicle guide warranty section.

Standard equipment includes: Coolant recovery; front towing devices; fan clutch, AM/FM radio; power takeoff opening at transmission; seatbelts, cab heater and defroster; tachometer (if diesel); electric power point, tinted glass, dual cab entry assist handles, gauges, predelivery serviced, engine shutdown (if Diesel), daytime running lights, anti-lock brake system, hub piloted wheels, air conditioning, remote jump start posts, electronic controlled engine and throttle control, (if diesel).



(CA) CAB to AXLE Dimension Must Be Specified - See Options Codes CA1-CA8

Special or Additional CA dimensions may be specified, if required.

See Option Codes Listing on pages 10 and 11.

CAB AND CHASSIS - OPTION CODES LISTING

X = Option available, S - Standard on specified item			4X2					4X4			
OPTION CODES		REF. PARA.	414	511	512	513	514	712	713	714	715
A14	ALTERNATOR, MIN 145 AMP	3.4.2.3	X	X	X	X	X	X	X	X	X
AAG	AIR APP GAGE	3.4.19		X	X	X	X	X	X	X	X
AICE	AUTOMATIC TIRE CHAINS	3.4.10.5	N/A	X	X	X	X	X	X	X	X
ASI	AIR FILTER SERVICE INDICATOR	3.4.3.1	X	X	X	X	X	X	X	X	X
AUXS	AUXILIARY REAR SPRINGS	3.4.8			X	X	X	X	X	X	X
BTC	TOOL COMPARTMENT	3.1.1.14	X	X	X	X	X	X	X	X	X
BUA	BACKUP ALARM	3.4.23	X	X	X	X	X	X	X	X	
CA1	CA 101/108 IN	3.5.1	X	X	X	X	X	X	X	X	X
CA2	CA 119/126 IN	3.5.1	X	X	X	X	X	X	X	X	X
CA3	CA 136/138 IN	3.5.1	X	X	X	X	X	X	X	X	X
CA4	CA 150/156 IN	3.5.1	X	X	X	X	X	X	X	X	X
CA5	CA 167/171 IN	3.5.1	X	X	X	X	X	X	X	X	X
CA6	CA 59/60 IN	3.5.1	X	X	X	X	X				
CA7	CA 71/72 IN	3.5.1	X	X	X	X	X				
CA8	CA 83/84 IN	3.5.1	X	X	X	X	X	X	X	X	X
CC	CREW CAB	3.4.12.2	X	X	X	X	X	X	X	X	X
CEC	CALIFORNIA EMISSIONS CONTROLS	3.2.2	X	X	X	X	X	X	X	X	X
CNG	COMPRESSED NATURAL GAS ENGINE	3.4.1.2	X	X	X	X	X	X	X	X	X
COE	TILT CAB	3.4.12	X	X	X	X	X				
CPT	CUSTOM PAINT EXTERIOR CAB	3.1.1.1	X	X	X	X	X	X	X	X	X
CTIS	CENTRAL TIRE INFLATION SYSTEM	3.1.1.20			X	X			X	X	
D1	DRIVER CONTROLLED DIFFERENTIAL LOCKOUT N/A WITH RA2	3.4.9.2	X	X	X	X	X	X	X	X	X
D3	REAR AXLE TRACTION CONTROL AUTOMATIC	3.4.9.2	X	X	X	X	X	X	X	X	X
DA	DELETE AIR CONDITIONING	3.4.25	X	X	X	X	X	X	X	X	X
DRLD	DAYTIME RUNNING LIGHTS - DELETE	3.4.2.4	X	X	X	X	X	X	X	X	X
DSS	DRIVER SUSPENSION SEAT (MECHANICAL ON HYD BRAKED VEHICLES/AIR ON AIR BRAKED VEHICLES) INCLUDES FIXED PASSENGER SEAT	3.4.12.1	X	X	X	X	X	X	X	X	X
DSS2	DRIVER SEAT AND PASSENGER SEAT CONFORMING TO DSS	3.4.12.1	X	X	X	X	X	X	X	X	X
E5	V8 EXTRA POWER GAS ENG. MIN 230 NHP	3.4.1.2	X	X	X		X	X	X		
ECB	ENGINE COMPRESSION BRAKE	3.4.11.4(B)				X				X	
ECF	ENGINE COOLANT FILTER	3.4.1.5	X	X	X	X	X	X	X	X	X
EDR	DRIVELINE RETARDER	3.4.11.4(A)		X	X	X	X	X	X	X	
EH	BLOCK HEATER, OEM, 110V	3.4.1.9	X	X	X	X	X	X	X	X	X
EHM	ENGINE HOUR METER	3.4.22	X	X	X	X	X	X	X	X	X
EXB	ENGINE EXHAUST BRAKE	3.4.11.4(C)		X	X	X	X	X	X	X	
FEX	EMERGENCY EQUIPMENT, EXTINGUISHER, AND TRIANGLES	3.4.28	X	X	X	X	X	X	X	X	X
FFE	FRONT FRAME EXTENSION	3.4.7		X	X	X	X	X	X	X	
FFP	FUEL FIRED ENGINE PREHEATER	3.4.1.10	X	X	X	X	X	X	X	X	X
FFS	HEATED FUEL/WATER SEPARATOR	3.4.1.9.1	X	X	X	X	X	X	X	X	X
FHD	HEAVY DUTY FRAME	3.4.7	X	X	X	X	X	X	X	X	X
FJP	AVIATION JET FUEL COMPATABILITY WITH DIESEL ENGINE	3.4.1.1	X	X	X	X	X	X	X	X	X
FTC	FUEL TANKS, MIN 70 GAL TOTAL CAP	3.4.3.2	X	X	X	X	X	X	X	X	X
FTD	FUEL TANKS, MIN 100 GAL TOTAL CAP	3.4.3.2	X	X	X	X	X	X	X	X	X
H4	COOLANT PROTECTION TO -47C (-63F)	3.4.26.1	X	X	X	X	X	X	X	X	X
HF	WIDE BASE SINGLE TIRES & WHEELS	3.4.10							X	X	
LH	LOW PROFILE CHASSIS (N/A W/COE)	3.4.7	X	X							
LPG	LIQUID PROPANE GAS	3.4.1.2	X	X	X	X		X	X	X	X
LSD	SYNTHETIC LUBE-DIFFERENTIAL	3.4.30	X	X	X	X	X	X	X	X	X
LST	SYNTHETIC LUBE - MANUAL TRANSMISSION	3.4.31	X	X	X	X	X	X	X	X	X
MHW	FRONT MOUNTED WINCH	3.4.27		X	X	X	X	X	X	X	
MIL	MILITARY SERVICE MARKING, TAGS, DATA PLATES & FORMS	3.1.1.2	X	X	X	X	X	X	X	X	X
MPR	SNOW PLOW PROVISIONS	3.2.6.2	X	X	X	X	X	X	X	X	X
MS	MUD & SNOW TREAD TIRES (REAR AXLE)	3.4.10.1	X	X	X	X	X				
MTL	TRAILER LIGHTING CABLE	3.1.1.8	X	X	X	X	X	X	X	X	X
PH	PINTLE HEIGHT 510 MM (20 IN)	3.1.1.8	X	X	X	X	X	X	X	X	X
PSM	PARTS LIST OR BOOK & SHOP REPAIR MANUAL(S)	6.6	X	X	X	X	X	X	X	X	X
PSMD	PARTS AND SERVICE MANUALS ON DISK	6.6	X	X	X	X	X	X	X	X	X

CAB AND CHASSIS - OPTION CODES LISTING

X = Option available, S - Standard on specified item			4X2					4X4			
OPTION CODES		REF. PARA.	414	511	512	513	514	712	713	714	715
PSM2	PARTS AND SERVICE MANUALS - AIR FORCE	6.6	X	X	X	X	X	X	X	X	X
PSM3	PARTS AND SERVICE MANUALS - AIR FORCE	6.6	X	X	X	X	X	X	X	X	X
PTS	POWER OPERATED PTO ENGAGEMENT (N/A W/MAN. TRANS)	3.4.5.3				X				X	
RA2	REAR AXLE, 2 SPEED N/A/ WITH D1	3.4.9.1	X	X	X	X	X				
RACS	INTEGRAL CASSETTE PLAYER	3.4.24	X	X	X	X	X	X	X	X	X
RM3	MOTORIZED RIGHT SIDE MIRROR (INCLUDES RM4)	3.4.20	X	X	X	X	X	X	X	X	X
RM4	HEATED FLAT MIRRORS	3.4.20	X	X	X	X	X	X	X	X	X
RTH	REAR TOW HOOKS (N/A W/TTP OR PH)	3.1.1.6	X	X	X	X	X	X	X	X	X
SAR	REAR AIR SUSPENSION.	4.8.1			X	X	X				
SC	SILICONE RUBBER HOSES, W/STAINLESS STEEL CLAMPS	3.4.1.8	X	X	X	X	X	X	X	X	X
SEH	COLD WEATHER PACKAGE (INCLUDES SEH A, B, AND D)	3.4.1.9	X	X	X	X	X	X	X	X	X
SEHA	COOLANT HEATER, INCLUDES JUNCTION BLOCK & CORD	3.4.1.9	X	X	X	X	X	X	X	X	X
SEHB	ENGINE OIL HEATER, INCLUDES JUNCTION BLOCK & CORD	3.4.1.9	X	X	X	X	X	X	X	X	X
SEHC	IN-LINE FUEL WARMER	3.4.1.9	X	X	X	X	X	X	X	X	X
SEHD	IN-TANK FUEL WARMER	3.4.1.9	X	X	X	X	X	X	X	X	X
SEHE	IN-LINE FUEL WARMER (ELECTRICAL)	3.4.1.9	X	X	X	X	X	X	X	X	X
SK	METRIC ODOMETER	3.4.19	X	X	X	X	X	X	X	X	X
SKS	SPARK ARRESTER, EXHAUST SYSTEM (W/GASOLINE ENGINES ONLY)	3.4.4.1	X	X	X	X		X	X	X	X
SLP	LOW PROFILE TIRES	3.4.10.1	X	X	X	X	X	X	X	X	X
SRP	RUSTPROOFING	3.1.1.3	X	X	X	X	X	X	X	X	X
STA	SPARE TIRE ASSEMBLY	3.4.10.3	X	X	X	X	X	X	X	X	X
STB	SPARE TIRE ASSEMBLY (REAR AXLE)	3.4.10.4	X	X	X	X	X	X	X	X	X
STC	CARRIER SPARE TIRE	3.4.10.2	X	X	X	X	X	X	X	X	X
STF	STAGGERED FRAME	3.1.1.16						X	X	X	X
T1	INTEGRAL OUTPUT RETARDER (WITH AUTOMATIC TRANSMISSION)	3.4.11.4(D)	X	X	X	X	X	X	X		
T5	MANUAL TRANSMISSION 5 SPD MIN	3.4.5.2	X	X	X	X		X	X	X	
T6	MANUAL TRANSMISSION 6 SPD MIN	3.4.5.2	X	X	X	X	X		X	X	X
T53	AUTOMATIC TRANS. MIN 5 SPD, MAX NET INPUT TORQUE 800 LB/FT CAP	3.4.5.1	X	X	X	X		X	X	X	
T66	AUTOMATIC TRANS. MIN 5 SPD, MAX NET INPUT TORQUE BETWEEN 850 LB/FT AND 1100 LB/FT	3.4.5.1	X	X	X	X		X	X	X	
T75	AUTOMATIC TRANS. MIN 5 SPD, MAX NET INPUT TORQUE BETWEEN 1100 LB/FT AND 1460 LB/FT	3.4.5.1					X				X
TBE	ELECTRIC BRAKE CONTROLLER	3.1.1.9	X	X	X	X	X	X	X	X	X
TBT	BRAKE CONTROLS FOR USE FROM A TOWING VEHICLE	3.4.11.3		X	X	X	X	X	X	X	X
TJ	TOOLS, HYD JACK, WHEEL WRENCH & HNDL	3.4.16.1	X	X	X	X	X	X	X	X	X
TP	TWO-TONE PAINT, EXT. CAB (OEM STD)	3.1.1.1	X	X	X	X	X	X	X	X	X
TTP	TRAILER TOWING PKG	3.1.1.8	X	X	X	X	X	X	X	X	X
VES	VERTICAL EXHAUST PIPE DIESEL ONLY	3.4.4	X	X	X	X	X	X	X	X	X
VOL	AUXILIARY 24 VOLT SYSTEM W/TRAILER RECEPTACLE	3.4.2.8	X	X	X	X	X	X	X	X	X
WLP	WHEELS PAINTED SAME COLOR AS CAB	3.1.1.1	X	X	X	X	X	X	X	X	X
WN	INTERMITTENT WIPERS	3.4.14	X	X	X	X	X	X	X	X	X
XP	EXPORT PACKAGING	5.1	X	X	X	X	X	X	X	X	X
YD2	DIESEL ENGINE MIN 190 GHP, 485 LB/FT TORQUE, TURBO CHARGED	3.4.1.1	X	S							
YD3	DIESEL ENGINE MIN 205 GHP, 520 LB/FT TORQUE, TURBO CHARGED	3.4.1.1		X	S			S	S		
YD4	DIESEL ENGINE MIN 210 GHP, 605 LB/FT TORQUE, TURBO CHARGED	3.4.1.1			X	S		X	X	S	
YD5	DIESEL ENGINE MIN 250 GHP, 660 LB/FT TORQUE, TURBO CHARGED	3.4.1.1				X		X	X		
YD6	DIESEL ENGINE MIN 275 GHP, 800 LB/FT TORQUE, TURBO CHARGED	3.4.1.1				X		X	X	X	
YD11	DIESEL ENGINE MIN 340 GHP, 1150 LB/FT TORQUE, TURBO CHARGED	3.4.1.1					X				X

TABLE 2

4X2 TRUCK, TRACTOR, WITH CAB, 2 DOOR (see paragraph 3.5.2)

ITEM NO.	522	523	524
MINIMUM REQUIREMENTS			
TYPE/CLASS	**II/E**	**II/F**	**II/G**
PAYLOAD (APPROX RANGE) kg (LBS)	**8,600 (17,500)**	**10,200 (21,000)**	**11,000 (23,500)**
Style, cab/tilt hood	#Conv. 2 dr.	#Conv. 2 dr	Conv. 2 dr
GVWR/GCWR	28000/45000	32000/55000	35000/60000
Curb weight, approx. base, kg (lb)	4,100 (10,500)	4,300 (11,000)	4,900 (11,500)
Axle, min frt rating, lbs./seals	8000/oil	10000/oil	12000/oil
Axle, min rear rating, lbs./spd/seals	21000/1 spd/oil	23000/1 spd/oil	23000/1spd/oil
Cab to axle (CA, cm (in.)	200-230 (80-90)	200-230 (80-90)	200-230 (80-90)
Suspension, frt/rear, min, lbs	8000/21000	10000/23000	12000/23000
Frame, RBM, min, in-lb	890,000	1,100,000	1,600,000
Engine, type	*diesel	*diesel	diesel
Engine CYL/GHP/gross torque, min.	6-8/250/660 turbo	6-8/250/660 turbo	4-6/300/1050
Trans. type/speeds, min.	auto/4 spd	auto/4 spd	*manual/9 spd
Clutch, size	-	-	H.D.A.
Differential	*std	*std	*std
Brakes, type, w/ trailer brake controls	full air, 3.4.11	full air, 3.4.11	full air
Steering	power	power	power
Springs/shocks	#front shocks	#front shocks	#front shocks
Wheels, type w/ dual rear	*disc	*disc	*disc
Tires, tubeless/min cap./tread (std.)	10R22.5F/hwy*	11 R22.5H rear/F front/hwy*	11R22.5H/hwy*
Alternator, rating cap.	*130 amp	*130 amp	*130 amp
Battery, CCA @ 0°F/reserve/diesel	1875/540 min	1875/540 min	1875/540 min
Battery, CCA @ 0°F/reserve/gas	535/115 min	535/115 min	-
Cooling and indicators	H.D.A.	H.D.A.	H.D.A.
Exhaust, type	#horizontal or vertical	#horizontal or vertical	#horizontal or vertical
Fuel tank, capacity, L (gal)	380(100)	380(100)	380(100)*
Mirrors, dual	flat and convex	flat and convex	flat & convex
Horn	electric and air	electric and air	electric & air
Body, provisions, fifth wheel, cm(in)	#90(36) in dia w/forks	#90(36) in dia w/forks	#90(36) dia w/forks
Fifth wheel, clearance/HT, cm (in.)	#160 (64)/H122(48)±3(1)	#160 (64)/H122(48)±3(1)	#160 (64)/H122(48)±3(1)

NOTES: * Indicates option available.

# Indicates alternate available.

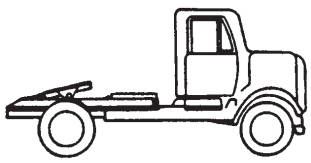
Extended warranty coverage may be available on these vehicles.

Refer to New Vehicle Guide warranty section.

Standard equipment includes: Coolant recovery; front towing devices; splash & stone guards; fan clutch, AM/FM radio; tachometer (if diesel); clearance lamps; power takeoff opening; seatbelts; cab heater & defroster; sliding fifth wheel, deck plate; hoses/wiring 110"; electric power point, tinted glass, dual cab entry assist handles, gauges, predelivery serviced, engine shutdown (if diesel), day time running lights, anti-lock brake system, hub piloted wheels, air conditioning, remote jump start posts, electronic controlled engine and throttle control, (if diesel).

NOTE:

Option Code OSW is only available to Military Agencies.



See Option Codes Listing on pages 14 and 15.

TABLE 2

4X4 TRUCK, TRACTOR, WITH CAB, 2 DOOR (see paragraph 3.5.2)

ITEM NO.	723	724	725
TYPE/CLASS	II/E	II/F	II/G
PAYLOAD (APPROX RANGE) Kg (LBS)	8,200 (17,000)	9,800 (20,500)	10,700 (21,000)
Style, cab/tilt hood	Conv. 2 dr.	Conv. 2 dr	Conv. 2 dr
GVWR/GCWR	28000/45000	32000/55000	35000/60000
Curb weight, approx. base, kg (lb)	4,500 (11,000)	4,700 (11,500)	5,000 (14,000)
Axle, min frt rating, lbs./seals	8000/grease	9000/grease	12000 (grease)/oil
Axle, min rear rating, lbs./spd/seals	21000/1 spd/oil	23000/1 spd/oil	23000/1 spd/oil
Cab to axle (CA, cm(in.)	200-230 (80-90)	200-230 (80-90)	200-230 (80-90)
Suspension, frt/rear, min, lbs	8000/21000	9000/23000	12000/23000
Frame, RBM, min, in-lb	890,000	1,100,000	1,600,000
Engine, type	*diesel	*diesel	diesel
Engine CYL/GHP/gross torque, min.	6-8/250/660 turbo	6-8/250/660 turbo	4-6/300/1050
Transmission type/speeds, min.	auto/4 spd	auto/4 spd	manual/9 spd
Clutch, size	-	-	H.D.A.
Differential	*std	*std	*std
Brakes, type, w/ trailer brake controls	full air, 3.4.11	full air, 3.4.11	full air
Steering	power	power	power
Springs/shocks	#front shocks	#front shocks	#front shocks
Wheels, type w/ dual rear	*disc	*disc	*disc
Tires, tubeless/min cap./tread (std.)	10R22.5F/AT-OO	11R22.5H/AT-OO	11R22.5H/AT-OO
Alternator, rating cap.	*130 amp	*130 amp	*130 amp
Battery, CCA @ 0°F/reserve/diesel	1875/540 min	1875/540 min	1875/540 min
Battery, CCA @ 0°F/reserve/gas	535/115 min	535/115 min	-
Cooling and indicators	H.D.A.	H.D.A.	H.D.A.
Exhaust, type	#horizontal or vertical	#horizontal or vertical	#horizontal or vertical
Fuel tank, capacity, L (gal)	380(100)	380(100)	380(100)
Mirrors, dual	flat & convex	flat & convex	flat & convex
Horn	electric & air	electric & air	electric & air
Body, provisions, fifth wheel, cm(in)	#90(36) in dia w/forks	#90(36) in dia w/forks	#90(36) dia w/forks
Fifth wheel, clearance/height, cm (in)	160(64)/H 152(60) ± 3(1)	160(64)/H 152(60) ± 3(1)	160(64)152(60)± 3(1)

NOTES: * Indicates option available.

Extended warranty coverage may be available on these vehicles.

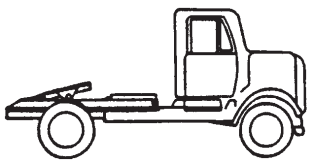
Refer to New Vehicle Guide warranty section.

Standard equipment includes: Coolant recovery; front towing devices; splash & stone guards; fan clutch, AM/FM radio; tachometer (if diesel); clearance lamps; power takeoff opening; seatbelts; cab heater & defroster; deck plate; hoses/wiring 110"; electric power point, tinted glass, dual cab entry assist handles, gauges, predelivery serviced, engine shutdown (if Diesel), day time running lights, anti-lock brake system, hub piloted wheels, air conditioning, remote jump start posts, electronic controlled engine and throttle control, (if diesel).

NOTE:

Option Code OSW is only available to Military Agencies.

See Option Codes Listing on pages 14 and 15.



TRUCK TRACTOR - OPTION CODES LISTING

X = Option available, S - Standard on specified item			4X2			4X4		
OPTION CODES		REF. PARA.	522	523	524	723	724	725
A14	ALTERNATOR, MIN 145 AMP	3.4.2.3	X	X	X	X	X	X
AAG	AIR APP GAGE	3.4.19	X	X	X	X	X	X
AICE	AUTOMATIC TIRE CHAINS	3.4.10.5	X	X	X	X	X	X
ARW	AIR RELEASE 5TH WHEEL (N/A w/OSW)	3.5.2.7	X	X	X	X	X	X
ASI	AIR FILTER SERVICE INDICATOR	3.4.3.1	X	X	X	X	X	X
ATR	AIR TRANSPORTABILITY (INCLUDES LTD)	3.1.1.21	X	X	X	X	X	X
AUXL	AUXILIARY LIGHTS FOR CPR &CPR1	3.5.2.11	X	X	X	X	X	X
AUXS	AUXILIARY REAR SPRINGS	3.4.8	X	X	X	X	X	X
BTC	TOOL COMPARTMENT	3.1.1.14	X	X	X	X	X	X
BUA	BACKUP ALARM	3.4.23	X	X	X	X	X	X
CEC	CALIFORNIA EMISSIONS CONTROLS	3.2.2	X	X	X	X	X	X
CNG	COMPRESSED NATURAL GAS ENGINE	3.4.1.2	X	X	X	X	X	X
CPR	CAB PROTECTION RACK	3.5.2.11	X	X	X	X	X	X
CPR1	CAB PROTECTION RACK	3.5.2.11	X	X	X	X	X	X
CPT	CUSTOM PAINT EXTERIOR CAB	3.1.1.1	X	X	X	X	X	X
D1	DRIVER CONTROLLED DIFFERENTIAL LOCKOUT (N/A WITH RA2)	3.4.9.2	X	X	X	X	X	X
D3	REAR AXLE TRACTION CONTROL AUTOMATIC	3.4.9.2	X	X	X	X	X	X
DA	DELETE AIR CONDITIONING	3.4.10	X	X	X	X	X	X
DRLD	DAYTIME RUNNING LIGHTS - DELETE	3.4.25	X	X	X	X	X	X
DSS	DRIVER SUSPENSION SEAT (MECHANICAL ON HYD. BRAKED VEHICLES/AIR ON AIR BRAKED VEHICLES) INCLUDES FIXED PASSENGER SEAT	3.4.12.1	X	X	X	X	X	X
DSS2	DRIVER SEAT AND PASSENGER SEAT CONFORMING TO DSS	3.4.12.1	X	X	X	X	X	X
ECB	ENGINE COMPRESSION BRAKE	3.4.11.4(B)			X			X
ECF	ENGINE COOLANT FILTER	3.4.1.5	X	X	X	X	X	X
EDR	DRIVELINE RETARDER	3.4.11.4(A)	X	X	X	X	X	X
EH	BLOCK HEATER, OEM, 110V	3.4.1.9	X	X	X	X	X	X
EHM	ENGINE HOUR METER	3.4.22	X	X	X	X	X	X
EXB	ENGINE EXHAUST BRAKE	3.4.11.4(C)	X	X	X	X	X	X
FEX	EMERGENCY EQUIPMENT,							
	EXTINGUISHER, AND TRIANGLES	3.4.28	X	X	X	X	X	X
FFP	FUEL FIRED ENGINE PREHEATER	3.4.1.10	X	X	X	X	X	X
FFS	HEATED FUEL/WATER SEPARATOR	3.4.1.9.1	X	X	X	X	X	X
FJP	AVIATION JET FUEL COMPATABILITY WITH DIESEL ENGINE	3.4.1.1	X	X	X	X	X	X
FTD	FUEL TANKS, MIN 100 GAL TOTAL CAPACITY	3.4.3.2	S	S	S	S	S	S
FTE	DUAL 100 GAL FUEL TANKS	3.4.3.2	X	X	X	X	X	X
FTR	TAPERED FRAME RAILS	3.4.7	X	X	X	X	X	X
H4	COOLANT PROTECTION TO -47C (-63F)	3.4.26.1	X	X	X	X	X	X
HF	WIDE BASE SINGLE TIRES & WHEELS	3.4.10					X	X
LPG	LIQUID PROPANE GAS	3.4.1.2	X	X		X	X	
LSD	SYNTHETIC LUBE - DIFFERENTIAL	3.4.31	X	X	X	X	X	X
LST	SYNTHETIC LUBE - MANUAL TRANSMISSION	3.4.31	X	X	X	X	X	X
LTD	LIFTING & TIEDOWN PROVISIONS	3.1.1.22	X	X		X	X	
MIL	MILITARY SERVICE MARKING, TAGS, DATA PLATES & FORMS	3.1.1.2	X	X	X	X	X	X
MS	MUD & SNOW TREAD TIRES (REAR AXLE)	3.4.10.1	X	X	X			
MTL	TRAILER LIGHTING CABLE "Not Required, unless TTP is Specified."	3.1.1.8	X	X	X	X	X	X
OSW	OSCILLATING 5TH WHEEL (MILITARY ONLY)	3.5.2	X	X	X	S	S	S
PH	PINTLE HEIGHT 510 MM (20 IN)	3.1.1.8	X	X	X	X	X	X
PSM	PARTS LIST OR BOOK & SHOP REPAIR MANUAL(S)	6.6	X	X	X	X	X	X
PSMD	PARTS AND SERVICE MANUALS ON DISK	6.6	X	X	X	X	X	X
PSM2	PARTS AND SERVICE MANUALS - AIR FORCE	6.6	X	X	X	X	X	X
PSM3	PARTS AND SERVICE MANUALS - AIR FORCE	6.6	X	X	X	X	X	X
RA2	REAR AXLE, 2 SPEED N/A WITH D1	3.4.9.1	X	X	X			
RACS	INTEGRAL CASSETTE PLAYER	3.4.24	X	X	X	X	X	X
RM3	MOTORIZED RIGHT SIDE MIRROR (INCLUDES RM4)	3.4.20	X	X	X	X	X	X
RM4	HEATED FLAT MIRRORS	3.4.20	X	X	X	X	X	X
SAR	REAR AIR SUSPENSION	3.4.8.1	X	X	X			
SC	SILICONE RUBBER HOSES, W/STAINLESS STEEL CLAMPS	3.4.1.8	X	X	X	X	X	X

TRUCK TRACTOR - OPTION CODES LISTING

X = Option available, S - Standard on specified item			4X2			4X4		
OPTION CODES		REF. PARA.	522	523	524	723	724	725
SEH	COLD WEATHER PACKAGE (INCLUDES SEH A, B, AND D)	3.4.1.9	X	X	X	X	X	X
SEHA	COOLANT HEATER, INCLUDES JUNCTION BLOCK & CORD	3.4.1.9	X	X	X	X	X	X
SEHB	ENGINE OIL HEATER, INCLUDES JUNCTION BLOCK & CORD	3.4.1.9	X	X	X	X	X	X
SEHC	IN-LINE FUEL WARMER	3.4.1.9	X	X	X	X	X	X
SEHD	IN-TANK FUEL WARMER	3.4.1.9	X	X	X	X	X	X
SEHE	IN-LINE FUEL WARMER (ELECTRICAL)	3.4.1.9	X	X	X	X	X	X
SK	METRIC ODOMETER	3.4.19	X	X	X	X	X	X
SLP	LOW PROFILE TIRES	3.4.10.1	X	X	X	X	X	X
SLP1	SLEEPER CAB	3.4.12.4	X	X	X	X	X	X
SRP	RUSTPROOFING	3.1.1.3	X	X	X	X	X	X
STA	SPARE TIRE ASSEMBLY	3.4.10.3	X	X	X	X	X	X
STB	SPARE TIRE ASSEMBLY (REAR AXLE)	3.4.10.3	X	X	X	X	X	X
STF	STAGGERED FRAME (RECOMMENDED ON 4X4)	3.1.1.16				X	X	X
T1	INTEGRAL OUTPUT RETARDER (WITH AUTOMATIC TRANSMISSION)	3.4.11.4(D)	X	X	X	X	X	X
T5	MANUAL TRANSMISSION 5 SPD MIN	3.4.5.2	X	X		X	X	
T6	MANUAL TRANSMISSION 6 SPD MIN	3.4.5.2	X	X		X	X	
T53	AUTOMATIC TRANS. MIN 5 SPD, MAX							
	NET INPUT TORQUE 800 LB/FT CAP	3.4.5.1	X	X		X	X	
T66	AUTOMATIC TRANS. MIN 5 SPD, MAX NET INPUT TORQUE BETWEEN 850 LB/FT 1100 LB/FT CAP	3.4.5.1	X	X		X	X	
T75	AUTOMATIC TRANS. MIN 5 SPD, MAX NET INPUT TORQUE BETWEEN 1100 LB/FT and 1460 LB/FT	3.4.5.1			X			X
TBE	ELECTRIC BRAKE CONTROLLER	3.1.1.9	X	X	X	X	X	X
TBT	BRAKE CONTROLS FOR USE FROM A TOWING VEHICLE	3.4.11.3	X	X	X	X	X	X
TJ	TOOLS, HYD JACK, WHEEL WRENCH & HNDL	3.4.16.1	X	X	X	X	X	X
TP	TWO-TONE PAINT, EXT. CAB (OEM STD)	3.1.1.1	X	X	X	X	X	X
TTP	TRAILER TOWING PKG	3.1.1.8	X	X	X	X	X	X
TWD	TRACTOR WIND DEFLECTOR	3.5.2.8	X	X	X	X	X	X
VES	VERTICAL EXHAUST PIPE DIESEL ONLY	3.4.4	X	X	X	X	X	X
VMS	VERTICAL MOUNT SPARE TIRE CARRIER	3.4.10.2	X	X	X	X	X	X
VOL	AUXILIARY 24 VOLT SYSTEM W/TRAIL ER RECEPTACLE	3.4.2.8	X	X	X	X	X	X
WLP	WHEELS PAINTED SAME COLOR AS CAB	3.1.1.1	X	X	X	X	X	X
WN	INTERMITTENT WIPERS	3.4.14	X	X	X	X	X	X
XP	EXPORT PACKAGING	5.1	X	X	X	X	X	X
YD4	DIESEL ENGINE MIN 210 GHP, 605 LB/FT TORQUE, TURBO CHARGED	3.4.1.1	X			X		
YD5	DIESEL ENGINE MIN 250 GHP, 660 LB/FT TORQUE, TURBO CHARGED	3.4.1.1	S	S		S	S	
YD6	DIESEL ENGINE MIN 275 GHP, 800 LB/FT TORQUE, TURBO CHARGED	3.4.1.1	X	X	X	X	X	X
YD11	DIESEL ENGINE MIN 340 GHP, 1150 LB/FT TORQUE, TURBO CHARGED	3.4.1.1			X			X

TABLE 3

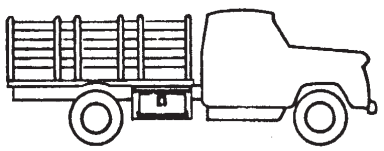
4X2 TRUCK, STAKE, WITH CAB, 2 or 4 DOOR (see paragraph 3.5.3)

ITEM NO.	434	531	532	533
MINIMUM REQUIREMENTS				
TYPE/CLASS	**IIII/C**	**III/D**	**III/E**	**III/F**
PAYLOAD (APPROX. RANGE) Kg (LBS)	**5200 (11,000)**	**7300** (13,000)	**8000** (15,000)	**9500** (18,500)
Style, cab/tilt hood	#Conv/2 dr.#	Conv/2 dr.#	Conv/2 dr.#	Conv/2 dr.#
GVWR/GCWR	21000/ 30000	25500/ 43000	28000/ 45000	32000/ 55000
Curb weight, approx. base kg (lb)	4300 (10,000)	4500 (11,500)	4800 (12,000)	5000 (13,000)
Axle, min frt rating, lbs/seals	6000/oil	8000/oil	9000/oil1	11000/oil2
Axle, min rear rating, lbs/spd/seals	15000/ 1 spd*/oil	17500/ 1 spd*/oil	19000/1 1 spd/oil	21000/1 1 spd/oil
Suspension, frt/rear, min, lbs	6000/ 15000	8000/ 17500	9000/ 190001	11000/ 210002
Cab to axle (CA), in.	as required	as required	as required	as required
Frame, RBM, min, in-lb	440,000#	475,000#	620,000#	800,000#
Engine, type	*diesel	*diesel	*diesel	*diesel
Engine CYL/GHP/gross torque, min	*6-8/175/ 420 turbo	*6-8/190/ 485 turbo	*6-8/205/ 520 turbo	*6-8/210/ 605 turbo
Trans. type/speeds, min	auto/4 spd	auto/4 spd	auto/4 spd	auto/4 spd
Differential	*std	*std	*std	*std
Brakes, type	hyd/power	full air	full air	full air
Steering	power	power	power	power
Springs/shocks	aux rear/ front shocks	aux rear/ front shocks	front shocks	front shocks
Wheels, type w/ dual rear	* disc	* disc	*disc	*disc
Tires, tubeless, min cap/tread (std)	9R22.5F/ hwy*	10R22.5F/ hwy*	10R22.5G1/ hwy*	11R22.5G2/ hwy*
Alternator, rating cap. (H.D.)	*130 amp	*130 amp	*130 amp	*130 amp
Battery, CCA @ 0°F/reserve/gas	535/ 115 min.	535/ 115 min.	540/ 115 min.	540/ 115 min.
Battery, CCA @ 0°F/reserve/diesel	1875 /540 min	1875/ 540 min	1875/ 540 min	1875/ 540 min
Cooling and indicators	H.D.A.	H.D.A.	H.D.A.	H.D.A.
Exhaust, type	horizontal	horizontal	horizontal	horizontal
Fuel tank, capacity, L (gal)	*170 (45)	*170 (45)	*170 (45)	*170 (45)
Mirrors, dual	flat & convex	flat & convex	flat & convex	flat & convex
Horn	electric	electric & air	electric & air	electric & air
Body, length x width, m (ft) (+0")	#4.9 (16) x2.4 (8)	#5.5 (18) x2.4 (8)	#6 (20) x2.4 (8)	#6.6 (22) x2.4 (8)
Body floor platform	#wood	#wood	#wood	#wood

NOTES: * Indicates option available. # Indicates alternate available.

1. Class E alternate minimum axle and suspension rating, front/rear, lb - 8000/21000 - Tires, min 11R22.5G
2. Class F alternate minimum axle and suspension rating, front/rear, lb - 10000/23000 - Tires, min 11R22.5H rear/G front
3. Extended warranty coverage may be available on these vehicles. Refer to New Vehicle Guide warranty section.

Standard equipment includes: Coolant recovery; front towing devices; fan clutch, AM/FM radio; power takeoff opening at transmission; seatbelts, cab heater and defroster; tachometer (if diesel); electric power point, tinted glass, dual cab entry assist handles, gauges, predelivery serviced, engine shutdown (if diesel), day time running lights, anti-lock brake system on air brake vehicles, hub piloted wheels, air conditioning, remote jump start posts, electronic controlled engine, and throttle control, (if diesel).



See Option Codes Listing on pages 18 and 19

TABLE 3

4X4 TRUCK, STAKE, WITH CAB, 2 or 4 DOOR (see paragraph 3.5.3)

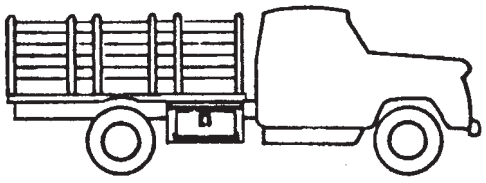
ITEM NO.	732	733	734
MINIMUM REQUIREMENTS			
TYPE/CLASS	**III/D**	**III/E**	**III/F**
PAYLOAD (APPROX. RANGE) Kg (LBS)	**6800** (12,000)	**7500** (13,500)	**9100** (17,500)
Style, cab/tilt hood	Conv/2 dr.#	Conv/2 dr.#	Conv/2 dr.#
GVWR/GCWR	25500/43000	28000/45000	32000/55000
Curb weight, approx. base kg (lb)	4000 (13,000)	5200 (13,500)	5400 (14,000)
Axle, min frt rating, lbs/seals	8000/grease	9000/grease	12000/grease/oil
Axle, min rear rating, lbs/spd/seals	17500/1 spd/oil	19000/1 spd/oil	21000/1 spd/oil
Suspension, frt/rear, min, lbs	8000/17500	9000/19000	12000/21000
Cab to axle (CA), in.	as required	as required	as required
Frame, RBM, min, in-lb	620,000#	620,000#	800,000#
Engine, type	*diesel	*diesel	*diesel
Engine CYL/GHP/gross torque, min	*6-8/205/520 turbo	*6-8/205/520 turbo	*6-8/210/605 turbo
Trans. type/speeds, min	auto/4 spd	auto/4 spd	auto/4 spd
Differential	*std	*std	*std
Brakes, type	full air	full air	full air
Steering	power	power	power
Springs/shocks aux rear/front	front shocks	front shocks	front shocks
Wheels, type w/ dual rear	*disc	*disc	*disc
Tires, tubeless, min cap/tread (std)	10R22.5G/ST-OO	10R22.5G/AT-OO	11R22.5G/AT-OO
Alternator, rating cap. (H.D.)	*130 amp	*130 amp	*130 amp
Battery, CCA @ 0°F/reserve/gas	535/115 min	535/115 min	535/115 min
Battery, CCA @ 0°F/reserve/diesel	1875/540 min	1875/540 min	1875/540 min
Cooling and indicators	H.D.A.	H.D.A.	H.D.A.
Exhaust, type	horizontal	horizontal	horizontal
Fuel tank, capacity, L (gal)	*170 (45)	*170 (45)	*170 (45)
Mirrors, dual	flat and convex	flat and convex	flat and convex
Horn	electric & air	electric & air	electric & air
Body, length x width, m (ft)	#6 (20) x 2.4 (8)	#6 (20) x 2.4 (8)	#6 (20) x 2.4 (8)
Body floor platform	#wood	#wood	#wood

NOTES: * Indicates option available.

# Indicates alternate available.

Extended warranty coverage may be available on these vehicles. Refer to new vehicle guide warranty section.

Standard equipment includes: Coolant recovery; front towing devices; fan clutch, AM/FM radio; power takeoff opening at transmission; seatbelts, cab heater and defroster; tachometer (if diesel); electric power point, tinted glass, dual cab entry assist handles, gauges, predelivery serviced, engine shutdown (if diesel), day time running lights, anti-lock brake system, hub piloted wheels, air conditioning, remote jump start posts, electronic controlled engine and throttle control, (if diesel).



See Option Codes Listing on pages 18 and 19.

TRUCK, STAKE - OPTION CODES LISTING

X = Option available, S - Standard on specified item			4X2				4X4		
OPTION CODES		REF. PARA.	434	531	532	533	732	733	734
A14	ALTERNATOR, MIN 145 AMP	3.4.2.3	X	X	X	X	X	X	X
AAG	AIR APP GAGE	3.4.19		X	X	X	X	X	X
AICE	AUTOMATIC TIRE CHAINS	3.4.10.5	N/A	X	X	X	X	X	X
ASI	AIR FILTER SERVICE INDICATOR	3.4.3.1	X	X	X	X	X	X	X
ATR	AIR TRANSPORTABILITY (INCLUDES LTD)	3.1.1.21	X	X	X	X	X	X	X
AUXS	AUX REAR SPRINGS	3.4.8			X	X	X	X	X
B12	BODY 12 FT	3.5.3	X	X	X	X	X	X	X
B14	BODY 14 FT	3.5.3	X	X	X	X	X	X	X
B16	BODY 16 FT	3.5.3	S	X	X	X	X	X	X
B18	BODY 18 FT	3.5.3	X	S	X	X	X	X	X
B20	BODY 20 FT	3.5.3	X	X	S	X	S	S	S
B22	BODY 22 FT	3.5.3	X	X	X	S			
BBS	BULKHEAD FRT, SOLID STEEL W/SCREEN ILO FRONT RACKS	3.5.3.6	X	X	X	X	X	X	X
BCS	CARGO BODY (OPEN TOP)	3.5.3.11	X				X		
BDF	DIAMOND TREAD STEEL FLR 1/8 IN	3.5.3.5	X	X	X	X	X	X	X
BDF2	DIAMOND TREAD STEEL FLR 3/16 IN	3.5.3.5	X	X	X	X	X	X	X
BDF3	APITONG WOOD FLOOR	3.5.3.4	X	X	X	X	X	X	X
BDS	DUMP STAKE & PLATFORM	3.5.3.9	X	X	X	X	X	X	X
BSF	SMOOTH STEEL FLOOR 1/8 IN	3.5.3.5	X	X	X	X	X	X	X
BSF2	SMOOTH STEEL FLOOR 3/16 IN	3.5.3.5	X	X	X	X	X	X	X
BSR	SWING R&L SIDE CTR RACKS	3.5.3	X	X	X	X	X	X	X
BTB	TARPAULIN, BOWS & TIES 70 IN HEIGHT	3.5.3.10	X	X	X	X	X	X	X
BTC	TOOL COMPARTMENT	3.1.1.14	X	X	X	X	X	X	X
BUA	BACKUP ALARM	3.4.23	X	X	X	X	X	X	X
CC	CREW CAB	3.4.12.2	X	X	X	X	X	X	X
CEC	CALIFORNIA EMISSIONS CONTROLS	3.2.2	X	X	X	X	X	X	X
CNG	COMPRESSED NATURAL GAS ENGINE	3.4.1.2	X	X	X	X	X	X	X
COE	TILT CAB	3.4.12	X	X	X	X			
CPT	CUSTOM PAINT EXTERIOR CAB	3.1.1.1	X	X	X	X	X	X	X
D1	DRIVER CONTROLLED DIFFERENTIAL LOCKOUT N/A WITH RA2	3.4.9.2	X	X	X	X	X	X	X
D3	REAR AXLE TRACTION CONTROL AUTOMATIC	3.4.9.2	X	X	X	X	X	X	X
DA	DELETE AIR CONDITIONING	3.4.25	X	X	X	X	X	X	X
DBEM	DELETE SIDE & END RACKS and Add BBS	3.5.3.6	X	X	X	X	X	X	X
DRLD	DAYTIME RUNNING LIGHTS - DELETE	3.4.2.4	X	X	X	X	X	X	X
DSS	DRIVER SUSPENSION SEAT (MECHANICAL ON HYD. BRAKED VEHICLES/AIR ON AIR BRAKED VEHICLES) INCLUDES FIXED PASSENGER SEAT	3.4.12.1	X	X	X	X	X	X	X
DSS2	DRIVER SEAT AND PASSENGER SEAT CONFORM TO DSS	3.4.12.1	X	X	X	X	X	X	X
E5	V8 OEM GAS ENGINE MIN 230 NHP	3.4.1.2	X	X	X	X	X	X	X
ECF	ENGINE COOLANT FILTER	3.4.1.5	X	X	X	X	X	X	X
EDR	DRIVELINE RETARDER	3.4.11.4(A)		X	X	X	X	X	
EH	BLOCK HEATER, OEM, 110V	3.4.1.9	X	X	X	X	X	X	X
EHM	ENGINE HOUR METER	3.4.22	X	X	X	X	X	X	X
EXB	ENGINE EXHAUST BRAKE	3.4.11.4(C)				X	X	X	X
FEX	EMERGENCY EQUIPMENT, EXTINGUISHER, AND TRIANGLES	3.4.28	X	X	X	X	X	X	X
FFP	FUEL FIRED ENGINE PREHEATER	3.4.1.10	X	X	X	X	X	X	X
FFS	HEATED FUEL/WATER SEPARATOR	3.4.1.9.1	X	X	X	X	X	X	X
FHD	HEAVY DUTY FRAME	3.4.7	X	X	X	X	X	X	X
FJP	AVIATION JET FUEL COMPATABILITY WITH DIESEL ENGINE	3.4.1.1	X	X	X	X	X	X	X
FPH	PLACARD HOLDERS PLATES	3.4.29	X	X	X	X	X	X	X
FTC	FUEL TANKS, MIN 70 GAL TOTAL CAPACITY	3.4.3.2	X	X	X	X	X	X	X
FTD	FUEL TANKS, MIN 100 GAL TOTAL CAPACITY	3.4.3.2	X	X	X	X	X	X	X
H4	COOLANT PROTECTION TO -47C (-63F)	3.4.26.1	X	X	X	X	X	X	X
HTG	HYD TAILGATE, FOLD UP (N/A WITH CODE TTP)	3.1.1.11.1	X	X	X	X	X	X	X
HTGC	HYD TAILGATE, CART-STOP	3.1.1.11	X	X	X	X	X	X	X
HTGU	HYD TAILGATE, FOLD UNDER (N/A WITH CODE TTP)	3.1.1.11.2	X	X	X	X	X	X	X
HTGX	HYD TAILGATE, EXTRA CAPACITY (N/A WITH CODE TTP)	3.1.1.11	X	X	X	X	X	X	X
HF	WIDE BASE SINGLE TIRES & WHEELS	3.4.10						X	
LED	LIGHT EMITTING DIODE LIGHTS	3.4.2.4	X	X	X	X	X	X	X
LPG	LIQUID PROPANE GAS	3.4.1.2	X	X	X	X	X	X	X
LSD	SYNTHETIC LUBE - DIFFERENTIAL	3.4.31	X	X	X	X	X	X	X
LST	SYNTHETIC LUBE - MANUAL TRANSMISSION	3.4.31	X	X	X	X	X	X	X
LTD	LIFTING & TIEDOWN PROVISIONS	3.1.1.22	X	X	X	X	X	X	X

TRUCK, STAKE - OPTION CODES LISTING

X = Option available, S - Standard on specified item			4X2				4X4		
OPTION CODES		REF. PARA.	434	531	532	533	732	733	734
MHW	FRONT MOUNTED WINCH	3.4.27		X	X	X	X	X	
MIL	MILITARY SERVICE MARKING, TAGS, DATA PLATES & FORMS	3.1.1.2	X	X	X	X	X	X	
MPP	SNOWPLOW POWER ANGLING	3.5.4.8.4	X	X	X	X	X	X	X
MPR	SNOW PLOW PROVISIONS	3.2.6.2	X	X	X	X	X	X	X
MPS	SNOW PLOW, REVERSIBLE TYPE	3.5.4.8	X	X	X	X	X	X	X
MS	MUD & SNOW TREAD TIRES (REAR AXLE)	3.4.10.1	X	X	X	X			
MTL	TRAILER LIGHTING CABLE	3.1.1.8	X	X	X	X	X	X	X
PH	PINTLE HEIGHT 510 MM (20 IN)	3.1.1.8	X	X	X	X	X	X	X
PSM	PARTS LIST OR BOOK & SHOP REPAIR MANUAL(S)	6.6	X	X	X	X	X	X	X
PSMD	PARTS AND SERVICE MANUALS ON DISK	6.6	X	X	X	X	X	X	X
PSM2	PARTS AND SERVICE MANUALS - AIR FORCE	6.6	X	X	X	X	X	X	X
PSM3	PARTS AND SERVICE MANUALS - AIR FORCE	6.6	X	X	X	X	X	X	X
PTS	POWER OPERATED PTO ENGAGEMENT (N/A W/MAN. TRANS.)	3.4.5.3	X	X	X	X	X	X	X
RA2	REAR AXLE, 2 SPEED (N/A WITH D1)	3.4.9.1	X	X	X	X			
RACS	INTEGRAL CASSETTE PLAYER	3.4.24	X	X	X	X	X	X	X
RM3	MOTORIZED RIGHT SIDE MIRROR (INCLUDES RM4)	3.4.20	X	X	X	X	X	X	X
RM4	HEATED FLAT MIRRORS	3.4.20	X	X	X	X	X	X	X
RTH	REAR TOW HOOKS (N/A W/TTP OR PH)	3.1.1.6	X	X	X	X	X	X	X
SAC	MATERIAL HANDLING CRANE	3.5.3.8	X	X	X	X	X	X	X
SAR	REAR AIR SUSPENSION	3.4.8.1			X	X			
SC	SILICONE RUBBER HOSES, W/STAINLESS STEEL CLAMPS	3.4.1.8	X	X	X	X	X	X	X
SEH	COLD WEATHER PACKAGE (INCLUDES SEH A, B, AND D	3.4.1.9	X	X	X	X	X	X	X
SEHA	COOLANT HEATER, INCLUDES JUNCTION BLOCK & CORD	3.4.1.9	X	X	X	X	X	X	X
SEHB	ENGINE OIL HEATER, INCLUDES JUNCTION BLOCK & CORD	3.4.1.9	X	X	X	X	X	X	X
SEHC	IN-LINE FUEL WARMER	3.4.1.9	X	X	X	X	X	X	X
SEHD	IN-TANK FUEL WARMER	3.4.1.9	X	X	X	X	X	X	X
SEHE	IN-LINE FUEL WARMER (ELECTRICAL)	3.4.1.9	X	X	X	X	X	X	X
SK	METRIC ODOMETER	3.4.19	X	X	X	X	X	X	X
SKS	SPARK ARRESTER, EXHAUST SYSTEM (W/GASOLINE ENGINES ONLY)	3.4.4.1	X	X	X	X	X	X	X
SLP	LOW PROFILE TIRES	3.4.10.1	X	X	X	X	X	X	X
SRP	RUSTPROOFING	3.1.1.3	X	X	X	X	X	X	X
STA	SPARE TIRE ASSEMBLY	3.4.10.3	X	X	X	X	X	X	X
STB	SPARE TIRE ASSEMBLY (REAR AXLE)	3.4.10.4	X	X	X	X	X	X	X
STC	CARRIER SPARE TIRE	3.4.10.2	X	X	X	X	X	X	X
STF	STAGGERED FRAME	3.1.1.16					X	X	X
T1	INTEGRAL OUTPUT RETARDER (WITH AUTOMATIC TRANSMISSION)	3.4.11.4(D)			X	X	X	X	X
T5	MANUAL TRANSMISSION 5 SPD MIN	3.4.5.2	X	X	X	X	X	X	X
T6	MANUAL TRANSMISSION 6 SPD MIN	3.4.5.2	X	X	X	X	X	X	X
T53	AUTOMATIC TRANS. MIN 5 SPD, MAX NET INPUT TORQUE 800 LB/FT CAP	3.4.5.1	X	X	X	X	X	X	X
TBE	ELECTRIC BRAKE CONTROLLER	3.1.1.9	X	X	X	X	X	X	X
TBT	BRAKE CONTROLS FOR USE FROM A TOWING VEHICLE	3.4.11.3			X	X	X	X	X
TJ	TOOLS, HYD JACK, WHEEL WRENCH & HNDL	3.4.16.1	X	X	X	X	X	X	X
TP	TWO-TONE PAINT, EXT. CAB (OEM STD)	3.1.1.1	X	X	X	X	X	X	X
TSW	LOAD SECURING STRAPS AND STORABLE WINCH BINDERS	3.5.3.12	X	X	X	X	X	X	X
TTP	TRAILER TOWING PKG	3.1.1.8	X	X	X	X	X	X	X
VMS	VERTICAL MOUNT SPARE TIRE CARRIER	3.4.10.2	X	X	X	X	X	X	X
VOL	AUXILIARY 24 VOLT SYSTEM W/TRAILER RECEPTACLE	3.4.2.8	X	X	X	X	X	X	X
WLP	WHEELS PAINTED SAME COLOR AS CAB	3.1.1.1	X	X	X	X	X	X	X
WN	INTERMITTENT WIPERS	3.4.14	X	X	X	X	X	X	X
XP	EXPORT PACKAGING	5.1	X	X	X	X	X	X	X
YD2	DIESEL ENGINE MIN 190 GHP, 485 LB/FT TORQUE, TURBO CHARGED	3.4.1.1	X	S					
YD3	DIESEL ENGINE MIN 205 GHP, 520 LB/FT TORQUE, TURBO CHARGED	3.4.1.1		X	S		S	S	
YD4	DIESEL ENGINE MIN 210 GHP, 605 LB/FT TORQUE, TURBO CHARGED	3.4.1.1			X	S	X	X	S
YD5	DIESEL ENGINE MIN 250 GHP, 660 LB/FT TORQUE, TURBO CHARGED	3.4.1.1				X			X

TABLE 4

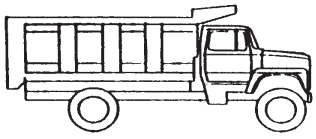
4X2 TRUCK, DUMP, WITH CAB, 2 DOOR (see paragraph 3.5.4)

ITEM NO.	444	541	542	543	544
MINIMUM REQUIREMENTS					
TYPE/CLASS	IV/C	IV/D	IV/E	IV/F	IV/G
PAYLOAD(APPROX.RANGE)KG(LBS.)	5000 (10,000)	6800 (13,500)	7200 (15,000)	8600 (18,000)	9500 (20,000)
Style, cab/tilt hood	Conv/2 door	Conv/2 dr	Conv/2 dr	Conv/2 dr	Conv/2 dr
GVWR/GCWR	21000/ 30000	25500/ 43000	28000/ 45000	32000/ 55000	35000/ 60000
Curb weight, approx. base, kg (lbs)	4550 (11,000)	5000 (12,500)	5400 (13,000)	5900 (14,000)	6300 (15,000)
Axle, min frt rating, lbs/seals	6000/oil	8000/oil	9000/oil	12,000/oil	12000/oil
Axle, min rear rating, lbs/spd/seals	15000/ 1 spd/oil	17500/ 1 spd/oil	19000/ 1 spd/oil	21000/ 1 spd/oil	23000/ 1 spd/oil
Suspension, frt/rear, min, lbs	6000/15000	8000/17500	9000/19000	12000/21000	12000/23000
Cab to axle (CA), in.	as reqd.	as reqd.	as reqd.	as reqd.	as reqd.
Frame, RBM, min, in-lb	590,000	850,000	890,000	1,300,000	1,600,000
Engine, type	*diesel	*diesel	*diesel	*diesel	diesel
Engine CYL/GHP/gross torque, min	*6-8/175/ 420 turbo	*6-8/190/ 485 turbo	*6-8/205/ 520 turbo	*6-8/210/ 605 turbo	4-6/300/1050 turbo
Trans. type/speeds, min	*auto/ 4 spd	*auto/ 5 spd (T53)	*auto/ 5 spd (T53)	*auto/ 5 spd (T53)	*manual/ 9 spd
Clutch, size	-	-	-	-	H.D.A.
Differential, type (D3)	traction control	traction control	traction control	traction control	traction control
Brakes, type	hyd/power	full air	full air	full air	full air
Steering	power	power	power	power	power
Springs/shocks	aux rear/ front shocks	aux rear/ front shocks	front shocks	front shocks	front shocks
Wheels, type w/ dual rear	*disc	*disc	*disc	*disc	*disc
Tires, tubeless, min cap/tread (frt)	9R22.5F/hwy	10R22.5F/hwy*	10R22.5G/hwy	11R22.5G/hwy	11R22.5H/hwy
(rear)	OO*	OO*	OO*	OO*	OO*
Alternator, rating cap. (H.D.)	*130 amp	*130 amp	*130 amp	*130 amp	*130 amp
Battery, CCA @ 0°F/reserve/diesel	1875/ 540 min	1875/ 540 min	1875/ 540 min	1875/ 540 min	1875/ 540 min
Battery, CCA @ 0°F/reserve/gas	535/115 min	535/115 min	535/115 min	535/115 min	-
Cooling and indicators	H.D.A.	H.D.A.	H.D.A.	H.D.A.	H.D.A.
Exhaust, Type	Horizontal	Horizontal	Horizontal	Horizontal	Horizontal
Fuel tank, capacity, L(gal)	*170(45)	*170(45)	*170(45)	*170(45)	*170(45)
Mirrors, dual	flat & convex	flat & convex	flat & convex	flat & convex	flat & convex
Horn	electric	electric & air	electric & air	electric & air	electric & air
Body, dump cap, m3 (yd3)/	2.7 (3.5)/	3.1 (4)/	3.8 (5)/	4.6 (6)/	4.6 (6)/
L & W, m (in), min	2.4 (96) x 2.1 (84)	2.75 (108) x 2.1 (84)	3 (120) x 2.1 (84)	3 (120) x 2.1 (84)	3 (120) x 2.1 (84)
Cab protector, cm (in)/hoist rating	60 (23)/ class 40	60 (23)/ class 40	60 (23)/ class 40	60 (23)/ class 50	60 (23)/ class 60

NOTES: *Indicates option available.

Extended warranty coverage may be available on these vehicles. Refer to new vehicle guide warranty section.

Standard equipment includes: Coolant recovery; front towing devices; splash & stone guards, fan clutch, AM/FM radio; tachometer (if diesel); clearance lamps; power takeoff opening; seatbelts; variable speed hoist control; dump body safety lock; cab heater & defroster; backup alarm; electric power point, tinted glass, dual cab entry assist handles, gauges, predelivery serviced, engine shutdown (if diesel), either driver controlled or automatic rear axle traction control, day time running lights, anti-lock brake system on air brake vehicles, hub piloted wheels, air conditioning, remote jump start posts, electronic controlled engine, and throttle control, (if diesel), and dump bed cover.



See Option Codes Listing on pages 22 and 23.

TABLE 4

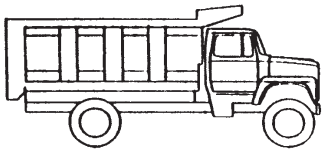
4X4 TRUCK, DUMP, WITH CAB, 2 DOOR (see paragraph 3.5.4)

ITEM NO.	742	743	744	745
MINIMUM REQUIREMENTS				
TYPE/CLASS	**IV/D**	**IV/E**	**IV/F**	**IV/G**
PAYLOAD(APPROX.RANGE)KG(LBS.)	**6400 (12,500)**	**6800 (14,000)**	**8200 (17,000)**	**9100 (18,500)**
Style, cab/tilt hood	Conv/2 dr	Conv/2 dr	Conv/2 dr	Conv/ 2 dr
GVWR/GCWR	25500/43000	28000/45000	32000/55000	35000/60000
Curb weight, approx. base, kg (lbs)	4600 (13,000)	5900 (14,000)	6400 (15,000)	6600 (16,500)
Axle, min frt rating, lbs/seals	8000/grease	9000/grease	12,000/grease/oil	12000/grease/oil
Axle, min rear rating, lbs/spd/seals	17500/1 spd/oil	19000/1 spd/oil	21000/1 spd/oil	23000/1 spd/oil
Suspension, frt/rear, min, lbs	8000/17500	9000/19000	12000/21000	12000/23000
Cab to axle (CA), in.	as reqd.	as reqd.	as reqd.	as reqd.
Frame, RBM, min, in-lb	890,000	890,000	1,300,000	1,600,000
Engine, type	*diesel	*diesel	*diesel	diesel
Engine CYL/GHP/gross torque, min	*6-8/205/520 turbo	*6-8/205/520 turbo	*6-8/210/605 turbo	*4-6/300/1050
Trans. type/speeds, min	*auto/5 spd (T53)	*auto/5 spd (T53)	*auto/5 spd (T53)	*Manual/9SPD
Clutch, size	-	-	-	H.D.A.
Differential, type (D3)	traction control	traction control	traction control	traction control
Brakes, type	full air	full air	full air	full air
Steering	power	power	power	power
Springs/shocks	front shocks	front shocks	front shocks	front shocks
Wheels, type w/ dual rear	*disc	*disc	*disc	*disc
Tires, tubeless, min cap/tread (std)	10R22.5G/AT-OO	10R22.5G/AT-OO	11R22.5G/AT-OO	11R22.5H/AT-OO
Alternator, rating cap. (H.D.)	*130 amp	*130 amp	*130 amp	*130 amp
Battery, CCA @ 0°F/reserve/diesel	1875/540 min	1875/540 min	1875/540 min	1875/540 min
Battery, CCA @ 0°F/reserve/gas	535/115 min	535/115 min	535/115 min	-
Cooling and indicators	H.D.A.	H.D.A.	H.D.A.	H.D.A.
Exhaust, Type	Horizontal	Horizontal	Horizontal	*horizontal
Fuel tank, capacity, L(gal)	*170(45)	*170(45)	*170(45)	*170 (45)
Mirrors, dual	flat & convex	flat & convex	flat & convex	flat & convex
Horn	electric & air	electric & air	electric & air	electric & air
Body, dump cap, m3 (yd3)/	3.8 (5)/	3.8 (5)/	4.6 (6)/	4.6 (6)/
L & W, m (in),min	3 (120) x 2.1 (84)	3 (120) x 2.1 (84)	3 (120)x 2.1 (84)	3 (120) x 2.1 (84)
Cab protector, cm (in)/hoist rating	60 (23)/class 40	60 (23)/class 40	60 (23)/class 50	60 (23)/class 60

NOTES: *Indicates option available.

Extended warranty coverage may be available on these vehicles. Refer to new vehicle guide warranty section.

Standard equipment includes: Coolant recovery; front towing devices; splash & stone guards, fan clutch, AM/FM radio; tachometer (if diesel); clearance lamps; power takeoff opening; seatbelts; variable speed hoist control; dump body safety lock; cab heater & defroster; backup alarm; electric power point, tinted glass, dual cab entry assist handles, gauges, predelivery serviced, engine shutdown (if diesel), either driver controlled or automatic rear axle traction control, day time running lights, anti-lock brake system, hub piloted wheels, air conditioning, remote jump start posts, electronic controlled engine, throttle control, (if diesel), and dump bed cover.



See Option Codes Listing on pages 22 and 23.

TRUCK, DUMP - OPTION CODES LISTING

X = Option available, S - Standard on specified item			4X2					4X4			
OPTION CODES		REF. PARA.	444	541	542	543	544	742	743	744	745
A14	ALTERNATOR, MIN 145 AMP	3.4.2.3	X	X	X	X	X	X	X	X	X
AAG	AIR APP GAGE	3.4.19		X	X	X	X	X	X	X	X
AICE	AUTOMATIC TIRE CHAINS	3.4.10.5	N/A	X	X	X	X	X	X	X	X
ART	AIR RELEASE TAILGATE	3.5.4.3		X	X	X	X	X	X	X	X
ASI	AIR FILTER SERVICE INDICATOR	3.4.3.1	X	X	X	X	X	X	X	X	X
ATR	AIR TRANSPORTABILITY (INCLUDES LTD)	3.1.1.21	X	X	X	X	X	X	X	X	X
AUXS	AUX REAR SPRINGS	3.4.8			X	X	X	X	X	X	X
BTC	TOOL COMPARTMENT	3.1.1.14	X	X	X	X	X				
BUA	BACKUP ALARM	3.4.23	S	S	S	S	S	S	S	S	S
CEC	CALIFORNIA EMISSIONS CONTROLS	3.2.2	X	X	X	X	X	X	X	X	X
CNG	COMPRESSED NATURAL GAS ENGINE	3.4.1.2	X	X	X	X	X	X	X	X	X
CP	CAB PROTECTOR 40 IN ILO 23 IN	3.5.4.2	X	X	X	X	X	X	X	X	X
CPT	CUSTOM PAINT EXTERIOR CAB	3.1.1.1	X	X	X	X	X	X	X	X	X
CTIS	CENTRAL TIRE INFLATION SYSTEM	3.1.1.20				X	X			X	X
D1	DRIVER CONTROLLED DIFFERENTIAL LOCKOUT (N/A WITH RA2)	3.4.9.2	X	X	X	X	X	X	X	X	X
D3	REAR AXLE TRACTION CONTROL AUTOMATIC	3.4.9.2	S	S	S	S	S	S	S	S	S
DA	DELETE AIR CONDITIONING	3.4.25	X	X	X	X	X	X	X	X	X
DBC	DELETE DUMP BED COVER	3.5.4.10	X	X	X	X	X	X	X	X	X
DHD	HEAVY DUTY BODY	3.5.4.1	X	X	X	X	X	X	X	X	X
DRLD	DAYTIME RUNNING LIGHTS - DELETE	3.4.2.4	X	X	X	X	X	X	X	X	X
DSS	DRIVER SUSPENSION SEAT (MECHANICAL ON HYD. BRAKED VEHICLES/AIR ON AIR BRAKED VEHICLES) INCLUDES FIXED PASSENGER SEAT	3.4.12.1	X	X	X	X	X	X	X	X	X
DSS2	DRIVER SEAT AND PASSENGER SEAT CONFORMS TO DSS	3.4.12.1	X	X	X	X	X	X	X	X	X
E5	V8 OEM GAS ENGINE MIN 230 NHP	3.4.1.2	X	X	X	X		X	X	X	
ECB	ENGINE COMPRESSION BRAKE	3.4.11.4(B)					X				X
ECF	ENGINE COOLANT FILTER	3.4.1.5	X	X	X	X	X	X	X	X	X
EDR	DRIVELINE RETARDER	3.4.11.4(A)	X			X	X	X	X	X	X
EH	BLOCK HEATER, OEM, 110V	3.4.1.9	X	X	X	X	X	X	X	X	X
EHM	ENGINE HOUR METER	3.4.22	X	X	X	X	X	X	X	X	X
EXB	ENGINE EXHAUST BRAKE	3.4.11.4(C)			X	X	X	X	X	X	X
FEX	EMERGENCY EQUIPMENT, EXTINGUISHER, AND TRIANGLES	3.4.28	X	X	X	X	X	X	X	X	X
FFP	FUEL FIRED ENGINE PREHEATER	3.4.1.10	X	X	X	X	X	X	X	X	X
FFS	HEATED FUEL/WATER SEPARATOR	3.4.1.9.1	X	X	X	X	X	X	X	X	X
FJP	AVIATION JET FUEL COMPATABILITY WITH DIESEL ENGINE	3.4.1.1	X	X	X	X	X	X	X	X	X
FPH	PLACARD HOLDERS PLATES	3.4.29	X	X	X	X	X	X	X	X	X
FTC	FUEL TANKS, MIN 70 GAL TOTAL CAPACITY	3.4.3.2	X	X	X	X	X	X	X	X	X
FTD	FUEL TANKS, MIN 100 GAL TOTAL CAPACITY	3.4.3.2	X	X	X	X	X	X	X	X	X
H4	COOLANT PROTECTION TO -47C (-63F)	3.4.26.1	X	X	X	X	X	X	X	X	X
HF	WIDE BASE SINGLE TIRES & WHEELS	3.4.10								X	X
LED	LIGHT EMITTING DIODE LIGHTS	3.4.2.4	X	X	X	X	X	X	X	X	X
LPG	LIQUID PROPANE GAS	3.4.1.2	X	X	X	X		X	X	X	
LSD	SYNTHETIC LUBE - DIFFERENTIAL	3.4.31	X	X	X	X	X	X	X	X	X
LST	SYNTHETIC LUBE - MANUAL TRANS.	3.4.31	X	X	X	X	X	X	X	X	X
LTD	LIFTING & TIEDOWN PROVISIONS	3.1.1.22	X	X	X	X		X	X	X	
MHW	FRONT MOUNTED WINCH	3.4.27	X	X	X	X	X	X	X	X	X
MIL	MILITARY SERVICE MARKING, TAGS, DATA PLATES & FORMS	3.1.1.2	X	X	X	X	X	X	X	X	X
MPP	SNOWPLOW POWER ANGLING	3.5.4.8.4	X	X	X	X	X	X	X	X	X
MPR	SNOW PLOW PROVISIONS	3.2.6.2	X	X	X	X	X	X	X	X	X
MPS	SNOW PLOW, REVERSIBLE TYPE	3.5.4.8	X	X	X	X	X	X	X	X	X
MS	MUD & SNOW TREAD TIRES (REAR AXLE)	3.4.10.1	S	S	S	S	S	S	S	S	S
MTL	TRAILER LIGHTING CABLE	3.1.1.8	X	X	X	X	X	X	X	X	X
NAS	SAND & SALT SPREADER TAILGATE	3.5.4.9	X	X	X	X	X	X	X	X	X
NSP	SKID-MOUNTED SAND & SALT SPREADER WITH HOPPER	3.5.4.9	X	X	X	X	X	X	X	X	X
PH	PINTLE HEIGHT 510 MM (20 IN)	3.1.1.8	X	X	X	X	X	X	X	X	X
PSM	PARTS LIST OR BOOK & SHOP REPAIR MANUAL(S)	6.6	X	X	X	X	X	X	X	X	X
PSMD	PARTS AND SERVICE MANUALS ON DISK	6.6	X	X	X	X	X	X	X	X	X
PSM2	PARTS AND SERVICE MANUALS - AIR FORCE	6.6	X	X	X	X	X	X	X	X	X
PSM3	PARTS AND SERVICE MANUALS - AIR FORCE	6.6	X	X	X	X	X	X	X	X	X
PTS	POWER OPERATED PTO ENGAGEMENT (N/A W/MAN. TRANS)	3.4.5.3	X	X	X	X	X	X	X	X	X
RA2	REAR AXLE, 2 SPEED	3.4.9.1	X	X	X	X	X				

TRUCK, DUMP - OPTION CODES LISTING

X = Option available, S - Standard on specified item			4X2					4X4			
OPTION CODES		REF. PARA.	444	541	542	543	544	742	743	744	745
RACS	INTEGRAL CASSETTE PLAYER	3.4.24	X	X	X	X	X	X	X	X	X
RM3	MOTORIZED RIGHT SIDE MIRROR (INCLUDES RM4)	3.4.20	X	X	X	X	X	X	X	X	X
RM4	HEATED FLAT MIRRORS	3.4.20	X	X	X	X	X	X	X	X	X
RTH	REAR TOW HOOKS (N/A W/TTP OR PH)	3.1.1.6	X	X	X	X	X	X	X	X	X
SC	SILICONE RUBBER HOSES, W/STAINLESS STEEL CLAMPS	3.4.1.8	X	X	X	X	X	X	X	X	X
SEH	COLD WEATHER PACKAGE (INCLUDES SEH A, B, AND D)	3.4.1.9	X	X	X	X	X	X	X	X	X
SEHA	COOLANT HEATER, INCLUDES JUNCTION BLOCK & CORD	3.4.1.9	X	X	X	X	X	X	X	X	X
SEHB	ENGINE OIL HEATER, INCLUDES JUNCTION BLOCK & CORD	3.4.1.9	X	X	X	X	X	X	X	X	X
SEHC	IN-LINE FUEL WARMER	3.4.1.9	X	X	X	X	X	X	X	X	X
SEHD	IN-TANK FUEL WARMER	3.4.1.9	X	X	X	X	X	X	X	X	X
SEHE	IN-LINE FUEL WARMER (ELECTRICAL)	3.4.1.9	X	X	X	X	X	X	X	X	X
SK	METRIC ODOMETER	3.4.19	X	X	X	X	X	X	X	X	X
SKS	SPARK ARRESTER, EXHAUST SYSTEM (W/GASOLINE ENGINES ONLY)	3.4.4.1	X	X	X		X	X	X	X	
SLP	LOW PROFILE TIRES	3.4.10.1	X	X	X	X	X	X	X	X	X
SRP	RUSTPROOFING	3.1.1.3	X	X	X	X	X	X	X	X	X
STA	SPARE TIRE ASSEMBLY (INC. SWR)	3.4.10.3	X	X	X	X	X	X	X	X	X
STB	SPARE TIRE ASSEMBLY (REAR AXLE)	3.4.10.4	X	X	X	X	X	X	X	X	X
T1	INTEGRAL OUTPUT RETARDER (WITH AUTOMATIC TRANSMISSION)	3.4.11.4(D)			X	X	X	X	X	X	X
T5	MANUAL TRANSMISSION 5 SPD MIN	3.4.5.2	X	X	X	X		X	X		
T6	MANUAL TRANSMISSION 6 SPD MIN	3.4.5.2	X	X	X	X		X	X		
T53	AUTOMATIC TRANS. MIN 5 SPD, MAX NET INPUT TORQUE 800 LB/FT CAP	3.4.5.1	X	S	S	S		S	S	S	
T66	AUTOMATIC TRANS. MIN 5 SPD, MAX NET INPUT TORQUE BETWEEN 850 LB/FT AND 1100 LB/FT	3.4.5.2	X	S	S	S	X	S	S	S	X
T75	AUTOMATIC TRANS. MIN 5 SPD, INPUT TORQUE BETWEEN 1100 LB/FT AND 1460 LB/FT	3.4.5.1					X			X	X
TBE	ELECTRIC BRAKE CONTROLLER	3.1.1.9	X	X	X	X	X	X	X	X	X
TBT	BRAKE CONTROLS FOR USE FROM A TOWING VEHICLE	3.4.11.3			X	X	X	X	X	X	X
TJ	TOOLS, HYD JACK, WHEEL WRENCH & HNDL	3.4.16.1	X	X	X	X	X	X	X	X	X
TP	TWO-TONE PAINT, EXT. CAB (OEM STD)	3.1.1.1	X	X	X	X	X	X	X	X	X
TTP	TRAILER TOWING PKG	3.1.1.8	X	X	X	X	X	X	X	X	X
UN	NESTED UNDERSTRUCTURE	3.5.4.4.2	X	X	X	X	X	X	X	X	X
VES	VERTICAL EXHAUST PIPE DIESEL ONLY	3.4.4	X	X	X	X	X	X	X	X	X
VMS	VERTICAL MOUNT SPARE TIRE CARRIER	3.4.10.2	X	X	X	X	X	X	X	X	X
VOL	AUXILIARY 24 VOLT SYSTEM W/TRAILER RECEPTACLE	3.4.2.8	X	X	X	X	X	X	X	X	X
WLP	WHEELS PAINTED SAME COLOR AS CAB	3.1.1.1	X	X	X	X	X	X	X	X	X
WN	INTERMITTENT WIPERS	3.4.14	X	X	X	X	X	X	X	X	X
XP	EXPORT PACKAGING	5.1	X	X	X	X	X	X	X	X	X
YD2	DIESEL ENGINE MIN 190 GHP, 485 LB/FT TORQUE, TURBO CHARGED	3.4.1.1	X	S							
YD3	DIESEL ENGINE MIN 205 GHP, 520 LB/FT TORQUE, TURBO CHARGED	3.4.1.1		X	S			S	S		
YD4	DIESEL ENGINE MIN 210 GHP, 605 LB/FT TORQUE, TURBO CHARGED	3.4.1.1			X	S		X	X	S	
YD5	DIESEL ENGINE MIN 250 GHP, 660 LB/FT TORQUE, TURBO CHARGED	3.4.1.1				X				X	
YD6	DIESEL ENGINE MIN 275 GHP, 800 LB/FT TORQUE, TURBO CHARGED						X				X
YD11	DIESEL ENGINE MIN 340 GHP, 1150 LB/FT TORQUE, TURBO CHARGED	3.4.1.1					X				X

TABLE 6

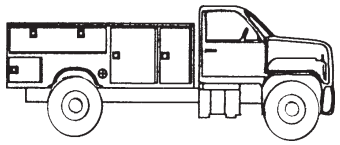
4X2 TRUCK, MAINTENANCE/LINE BODY, WITH CAB, 2 DOOR (see paragraph 3.5.6)

ITEM NO.	464	561	562	563
MINIMUM REQUIREMENTS				
TYPE/CLASS	VI/C	VI/D	VI/E	VI/F
PAYLOAD(APPROX.W/BODY)KG(LBS)	5700 (11,000)	7700 (13,500)	8400 (14,500)	10000 (19,500)
Style, cab/tilt hood	#Conv. 2 dr.#	#Conv. 2 dr.#	#Conv. 2 dr#	#Conv. 2 dr#
GVWR/GCWR, lbs	21000/30000	25500/43000	28000/45000	32000/55000
Curb weight, approx. base, kg (lbs)	3,400 (10,000)	3,600 (11,000)	3,800 (11,500)	4,000 (12,500)
Axle, min frt rating, lbs/seals	6000/oil	8000/oil	9000/oil1	11000/oil2
Axle, min rear rating, lbs/spd/seals	15000/ 1 spd*/oil	17500/ 1 spd*/oil	19000/1 1 spd*/oil	21000/2 1 spd*/oil
Suspension, frt/rear, min, lbs	6000/15000	8000/17500	9000/190001	11000/210002
Cab to axle (CA)	optional#	optional#	optional#	optional#
Frame, RBM, min, in-lb	440,000#	475,000#	620,000#	800,000#
Engine, type	*diesel	*diesel	*diesel	*diesel
Engine CYL/GHP/gross torque, min.	*6-8/175/420 turbo	*6-8/190/485 turbo	6-8/205/520 turbo	*6-8/210/605 turbo
Trans. type/speeds, min.	*auto/4 spd	*auto/4 spd	*auto/4 spd	*auto/4 spd
Differential	*std	*std	*std	*std.
Brakes, type	hyd/power	full air	full air	full air
Steering	power	power	power	power
Springs/shocks	aux rear/ front shocks	aux rear/ front shocks	aux rear/ front shocks	aux rear/ front shocks
Wheels, type w/ dual rear	* disc	* disc	* disc	* disc
Tires, tubeless/min cap/tread (std.)	9R22.5F/ hwy*	10R22.5F/ hwy*	10R22.5G1/ hwy*	11R22.5G2/ hwy*
Alternator, rating cap., min	*130 amp	*130 amp	*130 amp	*130 amp
Battery, CCA @ 0°F/reserve/diesel	1875/ 540 min	1875/ 540 min	1875/ 540 min	1875/ 540 min
Battery, CCA @ 0°/reserve/gas	535/115 min	535/115 min	535/115 min	535/115 min
Cooling and indicators	H.D.A.	H.D.A.	H.D.A.	H.D.A.
Exhaust, type	horizontal	horizontal	horizontal	horizontal
Fuel tank, capacity, L (gal)	*170 (45)	*170 (45)	*(170) 45	*170 (45)
Mirrors, dual	flat & convex	flat & convex	flat & convex	flat& convex
Horn	electric	electric & air	electric & air	electric & air
Body, length x width x cabinet height, M (FT)	3 (10) x 2.4 (7.7) x 1.2 (4)	3.3 (11) x 2.4 (7.7) x 1.2 (4)	3.6 (12)x 2.4 (7.7) x 1.2 (4)	4.2 (14) x 2.4 (7.7) x 1.2 (4)

NOTES: * Indicates option available.# Indicates alternate available below:

1. Class E alternate minimum axle and suspension rating, front/rear, LB - 8000/21000 - Tires, min 11R22.5G
2. Class F alternate minimum axle and suspension rating, front/rear, LB - 10000/23000 - Tires, min 11R22.5H rear/G front
3. Extended warranty coverage may be available on these vehicles. Refer to new vehicle guide warranty section.

Standard equipment includes: Coolant recovery; front towing devices; fan clutch, AM/FM radio; power takeoff opening at transmission; seatbelts, cab heater and defroster; tachometer (if diesel); electric power point, tinted glass, dual cab entry assist handles, gauges, predelivery serviced, engine shutdown (if diesel), daytime running lights, anti-lock brake system on air brake vehicles, hub piloted wheels, air conditioning, remote jump start posts, electronic controlled engine and throttle control, (if diesel).



See Option Codes Listing on pages 26 and 27.

TABLE 6

4X4 TRUCK, MAINTENANCE/LINE BODY, WITH CAB, 2 DOOR (see paragraph 3.5.6)

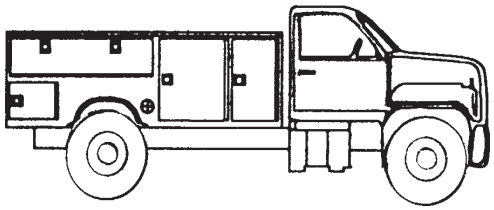
ITEM NO.	762	763	764
MINIMUM REQUIREMENTS			
TYPE/CLASS	VI/D	VI/E	VI/F
PAYLOAD (APPROX. W/BODY) KG (LBS)	**7300** (12,000)	**8,000** (14,000)	**9,500** (18,000)
Style, cab/tilt hood	#Conv. 2 dr.#	#Conv. 2 dr.#	#Conv. 2 dr.#
GVWR/GCWR, lbs	25500/43000	28000/45000	32000/55000
Curb weight, approx. base, kg (lbs)	3200 (13,000)	4,300 (13,000)	4,500 (13,500)
Axle, min frt rating, lbs/seals	8000/grease	9000/grease	12000/grease/oil
Axle, min rear rating, lbs/spd/seals	17500/1 spd/oil	19000/1 spd/oil	21000/1 spd/oil
Suspension, frt/rear, min, lbs	8000/17500	9000/19000	12000/21000
Cab to axle (CA)	optional#	optional#	optional#
Frame, RBM, min, in-lb	620,000#	620,000#	800,000#
Engine, type	*diesel	*diesel	*diesel
Engine CYL/GHP/gross torque, min.	6-8/205/520 turbo	6-8/205/520 turbo	*6-8/210/605 turbo
Transmission type/speeds, min.	*auto/4 spd	*auto/4 spd	*auto/4 spd
Differential	*std	*std	*std
Brakes, type	full air	full air	full air
Steering	power	power	power
Springs/shocks	aux. rear/front shocks	aux. rear/front shocks	aux. rear/front shocks
Wheels, type w/ dual rear	* disc	* disc	* disc
Tires, tubeless/min cap/tread (std.)	10R22.5G/AT-OO	10R22.5G/AT-OO	11R22.5G/AT-OO
Alternator, rating cap., min	*130 amp	*130 amp	*130 amp
Battery, CCA @ 0°F/reserve/diesel	1875/540 min	1875/540 min	1875/540
Battery, CCA @ 0°F/reserve/gas	535/115 min	535/115 min	535/115 min
Cooling and indicators	H.D.A.	H.D.A.	H.D.A.
Exhaust, type	horizontal	horizontal	horizontal
Fuel tank, capacity, L (gal)	*(170) 45	*(170) 45	*170 (45)
Mirrors, dual	flat and convex	flat and convex	flat and convex
Horn	electric & air	electric & air	electric & air
Body, length x width x cabinet height, M (FT)	3.3 (11) x 2.4 (7.7) x 1.2 (4)	3.3 (11) x 2.4 (7.7) x 1.2 (4)	3.6 (12) x 2.4 (7.7) x 1.2 (4)

NOTES: * Indicates option available.

# Indicates alternate available.

Extended warranty coverage may be available on these vehicles. Refer to new vheicle guide warranty section.

Standard equipment includes: Coolant recovery; front towing devices; fan clutch, AM/FM radio; power takeoff opening at transmission; seatbelts, cab heater and defroster; tachometer (if diesel); electric power point, tinted glass, dual cab entry assist handles, gauges, predelivery serviced, engine shutdown (if diesel), day time running lights, anti-lock brake system, hub piloted wheels, air conditioning, remote jump start posts, electronic controlled engine and throttle control, (if diesel).



See Option Codes Listing on pages 26 and 27.

X = Option available, S - Standard on specified item			4X2				4X4		
OPTION CODES		REF. PARA.	464	561	562	563	762	763	764
A14	ALTERNATOR, MIN 145 AMP	3.4.2.3	X	X	X	X	X	X	X
AAG	AIR APP GAGE	3.4.19		X	X	X	X	X	X
AICE	AUTOMATIC TIRE CHAINS	3.4.10.5	N/A	X	X	X	X	X	X
AL	ALUMINUM BODY	3.5.6.5.1	X	X	X	X	X	X	X
ASI	AIR FILTER SERVICE INDICATOR	3.4.3.1	X	X	X	X	X	X	X
B9	BODY 9 FT	3.5.6	X	X	X	X	X	X	X
B10	BODY 10 FT	3.5.6	S	X	X	X	X	X	X
B11	BODY 11 FT	3.5.6	X	S	X	X	S	S	X
B12	BODY 12 FT	3.5.6	X	X	S	X	X	X	S
B14	BODY 14 FT	3.5.6	X	X	X	S	X	X	X
BUA	BACKUP ALARM	3.4.23	X	X	X	X	X	X	X
CC	CREW CAB	3.4.12.2	X	X	X	X	X	X	X
CEC	CALIFORNIA EMISSIONS CONTROLS	3.2.2	X	X	X	X	X	X	X
CNG	COMPRESSED NATURAL GAS ENGINE	3.4.1.2	X	X	X	X	X	X	X
CPT	CUSTOM PAINT EXTERIOR CAB	3.1.1.1	X	X	X	X	X	X	X
D1	DRIVER CONTROLLED DIFFERENTIAL LOCKOUT N/A WITH RA2	3.4.9.2	X	X	X	X	X	X	X
D3	REAR AXLE TRACTION C ONTROL AUTOMATIC	3.4.9.2	X	X	X	X	X	X	X
DA	DELETE CONDITIONING	3.4.25	X	X	X	X	X	X	X
DRLD	DAYTIME RUNNING LIGHTS - DELETE	3.4.2.4	X	X	X	X	X	X	X
DSS	DRIVER SUSPENSION SEAT (MECHANICAL ON HYD. BRAKED VEHICLES/AIR ON AIR BRAKED VEHICLES) NCLUDES FIXED PASSENGER SEAT	3.4.12.1	X	X	X	X	X	X	X
DSS2	DRIVER SEAT AND PASSENGER SEAT CONFORMS TO DSS	3.4.12.1	X	X	X	X	X	X	X
E5	V8 EXTRA POWER GAS ENG. MIN 230 NHP	3.4.1.2	X	X	X	X	X	X	X
ECF	ENGINE COOLANT FILTER	3.4.1.5	X	X	X	X	X	X	X
EDR	DRIVELINE RETARDER	3.4.11.4(A)			X	X	X	X	X
EH	BLOCK HEATER, OEM, 110V	3.4.1.9	X	X	X	X	X	X	X
EHM	ENGINE HOUR METER	3.4.22	X	X	X	X	X	X	X
EXB	ENGINE EXHAUST BRAKE	3.4.11.4(C)			X	X	X	X	X
FEX	EMERGENCY EQUIPMENT, EXTINGUISHER, AND TRIANGLES	3.4.28	X	X	X	X	X	X	X
FFP	FUEL FIRED ENGINE PREHEATER	3.4.1.10	X	X	X	X	X	X	X
FFS	HEATED FUEL/WATER SEPARATOR	3.4.1.9.1	X	X	X	X	X	X	X
FG	FIBERGLASS BODY	3.5.6.5.2	X	X	X	X	X	X	X
FJP	AVIATION JET FUEL COMPATABILITY WITH DIESEL ENGINE	3.4.1.1	X	X	X	X	X	X	X
FPH	PLACARD HOLDERS PLATES	3.4.29	X	X	X	X	X	X	X
FTC	FUEL TANKS, MIN 70 GAL TOTAL CAPACITY	3.4.3.2	X	X	X	X	X	X	X
FTD	FUEL TANKS, MIN 100 GAL TOTAL CAPACITY	3.4.3.2	X	X	X	X	X	X	X
H4	COOLANT PROTECTION TO -47C (-63F)	3.4.26.1	X	X	X	X	X	X	X
HTG	HYD TAILGATE, FOLD UP (N/A WITH CODE TTP)	3.1.1.11.1	X	X	X	X	X	X	X
HTGC	HYD TAILGATE, Cart-stop	3.1.1.11	X	X	X	X	X	X	X
HF	WIDE BASE SINGLE TIRES & WHEELS	3.4.10							X
LED	LIGHT EMITTING DIODE LIGHTS	3.4.2.4	X	X	X	X	X	X	X
LPG	LIQUID PROPANE GAS	3.4.1.2	X	X	X	X	X	X	X
LSD	SYNTHETIC LUBE - DIFFERENTIAL	3.4.31	X	X	X	X	X	X	X
LST	SYNTHETIC LUBE - MANUAL TRANS.	3.4.31	X	X	X	X	X	X	X
LTD	LIFTING & TIEDOWN PROVISIONS	3.1.1.22	X	X	X	X	X	X	X
MHW	FRONT MOUNTED WINCH	3.4.27	X	X	X	X	X	X	X
MIL	MILITARY SERVICE MARKING, TAGS, DATA PLATES & FORMS	3.1.1.2	X	X	X	X	X	X	X
MPP	SNOWPLOW POWER ANGLING	3.5.4.8.4	X	X	X	X	X	X	X
MPR	SNOW PLOW PROVISIONS	3.2.6.2	X	X	X	X	X	X	X
MPS	SNOW PLOW, REVERSIBLE TYPE	3.5.4.8	X	X	X	X	X	X	X
MS	MUD & SNOW TREAD TIRES (REAR AXLE)	3.4.10.1	X	X	X	X			
MTL	TRAILER LIGHTING CABLE	3.1.1.8	X	X	X	X	X	X	X
PCI	PAINT CABINET INTERIOR (gloss gray)	3.5.6.5.3	X	X	X	X	X	X	X
PH	PINTLE HEIGHT 510 MM (20 IN)	3.1.1.8	X	X	X	X	X	X	X
PSM	PARTS LIST OR BOOK & SHOP REPAIR MANUAL(S)	6.6	X	X	X	X	X	X	X
PSMD	PARTS AND SERVICE MANUALS ON DISK	6.6	X	X	X	X	X	X	X
PSM2	PARTS AND SERVICE MANUALS - AIR FORCE	6.6	X	X	X	X	X	X	X
PSM3	PARTS AND SERVICE MANUALS - AIR FORCE	6.6	X	X	X	X	X	X	X

TRUCK MAINTENANCE/LINE BODY - OPTION CODES LISTING

X = Option available, S - Standard on specified item			4X2				4X4		
OPTION CODES		REF. PARA.	464	561	562	563	762	763	764
PTS	POWER OPERATED PTO ENGAGEMENT (N/A W/MAN. TRANS.)	3.4.5.3	X	X	X	X	X	X	X
RA2	REAR AXLE, 2 SPEED N/A WITH D1	3.4.9.1	X	X	X	X			
RACS	INTEGRAL CASSETTE PLAYER	3.4.24	X	X	X	X	X	X	X
RM3	MOTORIZED RIGHT SIDE MIRROR (INCLUDES RM4)	3.4.20	X	X	X	X	X	X	X
RM4	HEATED FLAT MIRRORS	3.4.20	X	X	X	X	X	X	X
SC	SILICONE RUBBER HOSES, W/STAINLESS STEEL CLAMPS	3.4.1.8	X	X	X	X	X	X	X
SEH	COLD EATHER PACKAGE (INCLUDES SEH A, B, AND D)	3.4.1.9	X	X	X	X	X	X	X
SEHA	COOLANT HEATER, INCLUDES JUNCTION BLOCK & CORD	3.4.1.9	X	X	X	X	X	X	X
SEHB	ENGINE OIL HEATER, INCLUDES JUNCTION BLOCK & CORD	3.4.1.9	X	X	X	X	X	X	X
SEHC	IN-LINE FUEL WARMER	3.4.1.9	X	X	X	X	X	X	X
SEHD	IN-TANK FUEL WARMER	3.4.1.9	X	X	X	X	X	X	X
SEHE	IN-LINE FUEL WARMER (ELECTRICAL)	3.4.1.9	X	X	X	X	X	X	X
SK	METRIC ODOMETER	3.4.19	X	X	X	X	X	X	X
SKS	SPARK ARRESTER, EXHAUST SYSTEM (W/GASOLINE ENGINES ONLY)	3.4.4.1	X	X	X	X	X	X	X
SLP	LOW PROFILE TIRES	3.4.10.1	X	X	X	X	X	X	X
SRP	RUSTPROOFING	3.1.1.3	X	X	X	X	X	X	X
STA	SPARE TIRE ASSEMBLY	3.4.10.3	X	X	X	X	X	X	X
STB	SPARE WHEEL ASSEMBLY (REAR AXLE)	3.4.10.4	X	X	X	X	X	X	X
T1	INTEGRAL OUTPUT RETARDER (WITH AUTOMATIC TRANSMISSION)	3.4.11.4(D)			X	X	X	X	X
T5	MANUAL TRANSMISSION 5 SPD MIN	3.4.5.2	X	X	X	X	X	X	X
T6	MANUAL TRANSMISSION 6 SPD MIN	3.4.5.2	X	X	X	X	X	X	X
T53	AUTOMATIC TRANS. MIN 5 SPD, MAX NET INPUT								
	TORQUE 800 LB/FT CAP	3.4.5.1	X	X	X	X	X	X	X
TBE	ELECTRIC BRAKE CONTROLLER	3.1.1.9	X	X	X	X	X	X	X
TBT	BRAKE CONTROLS FOR USE FROM A TOWING VEHICLE	3.4.11.3		X	X	X	X	X	X
TJ	TOOLS, HYD JACK, WHEEL WRENCH & HNDL	3.4.16.1	X	X	X	X	X	X	X
TP	TWO-TONE PAINT, EXT. CAB (OEM STD)	3.1.1.1	X	X	X	X	X	X	X
TTP	TRAILER TOWING PKG	3.1.1.8	X	X	X	X	X	X	X
UPR	PIPE RACK	3.5.6.5.4	X	X	X	X	X	X	X
URH	ROPE HOOKS	3.5.6.5.5	X	X	X	X	X	X	X
URO	OVERHEAD LADDER RACKS	3.5.6.5.6	X	X	X	X	X	X	X
USM	SIDE MOUNTED LADDER RACKS W/USS ONLY	3.5.6.5.7	X	X	X	X	X	X	X
USS	SUPERSTRUCTURE CLOSED BODY - STD. HT.	3.5.6.5.8	X	X	X	X	X	X	X
USS2	SUPERSTRUCTURE CLOSED BODY - INC. HT.	3.5.6.5.9	X	X	X	X	X	X	X
UTC	TIRE CARRIER (INSIDE LOADSPACE)	3.5.6.5.10	X	X	X	X	X	X	X
UTR	TELESCOPTING ROOF (N/A W/UTC)	3.5.6.5.11	X	X	X	X	X	X	X
UVB	VICE BRACKET	3.5.6.5.12	X	X	X	X	X	X	X
VOL	AUXILIARY 24 VOLT SYSTEM W/TRAILER RECEPTACLE	3.4.2.8	X	X	X	X	X	X	X
WLP	WHEELS PAINTED SAME COLOR AS CAB	3.1.1.1	X	X	X	X	X	X	X
WN	INTERMITTENT WIPERS	3.4.14	X	X	X	X	X	X	X
XP	EXPORT PACKAGING	5.1	X	X	X	X	X	X	X
YD2	DIESEL ENGINE MIN 190 GHP, 485 LB/FT TORQUE, TURBO CHARGED	3.4.1.1	X	S					
YD3	DIESEL ENGINE MIN 205 GHP, 520 LB/FT TORQUE, TURBO CHARGED	3.4.1.1		X	S		S	S	
YD4	DIESEL ENGINE MIN 210 GHP, 605 LB/FT TORQUE, TURBO CHARGED	3.4.1.1			X	S	X	X	S
YD5	DIESEL ENGINE MIN 250 GHP, 660 LB/FT TORQUE, TURBO CHARGED	3.4.1.1				X			X

TABLE 7

4X2 TRUCK, VAN, WITH CAB, 2 DOOR (see paragraph 3.5.7)

ITEM NO.	474	571	572	573
MINIMUM REQUIREMENTS				
TYPE/CLASS	**VII/C**	**VII/D**	**VII/E**	**VII/F**
PAYLOAD (APPROX. RANGE) KG (LBS)	**5400 (10,000)**	**7200** (13,000)	**7700 (14,500)**	**9800 (18,500)**
Style, cab/tilt hood	#Conv/2 dr	Conv/2 dr	Conv. 2 dr	Conv. 2 dr
GVWR/GCWR	21000/ 30000	25500/ 43000	28000/ 45000	32000 55000
Curb weight, approx. base, kg (lbs)	4000 (11,000)	4300 (12,000)	4500 (12,500)	47000 (13,500)
Axle, min frt rating, lbs/seals	6000/oil	8000/oil	9000/oil1	11000/oil2
Axle, min rear rating, lbs/spd/seals	15000/ 1 spd/oil	17500/ 1 spd/oil	19000/ oil1	21000/ 1 spd/oil2
Suspension, frt/rear, min, lbs	6000/15000	8000/17500	9000/190001	11000/210002
Cab to axle (CA), cm (in.)	as reqd.	as reqd.	as reqd.	as reqd.
Frame, RBM, min, in-lb	440,000#	475,000#	620,000#	800,000#
Engine, type	*diesel	*diesel	*diesel	*diesel
Engine CYL/GHP/gross torque, min	*6-8/175/420 turbo	*6-8/190/485 turbo	*6-8/205/520 turbo	*6-8/210/605
Trans. type/speeds, min	*auto/4 spd	*auto/4 spd	*auto/4 spd	*auto/4 spd
Differential	*std	*std	*std	*std
Brakes, type	*hyd/power	full air	full air	full air
Steering	power	power	power	power
Springs/shocks	aux rear/ front	aux rear/ front	aux rear/ front	aux rear/ front
Wheels, type w/ dual rear	*disc	*disc	disc	disc
Tires, tubeless, min cap/tread (std)	9R22.5F/hwy*	10R22.5F/hwy*	10R22.5G1/hwy*	11R22.5G2/hwy*
Alternator, rating cap. (H.D.)	*130 amp	*130 amp	*130 amp	*130 amp
Battery, CCA @ 0°F/reserve/diesel	1875/ 540 min	1875/ 540 min	1875/ 540 min	1875/ 540 min
Battery, CCA @ 0°F/reserve/gas	535/115 min	535/115 min	535/115 min	535/115 min
Cooling and indicators	H.D.A.	H.D.A.	H.D.A.	H.D.A.
Exhaust, type	horizontal	horizontal	horizontal	horizontal
Fuel tank, capacity, L (gal)	170 (*45)	170 (*45)	170 (*45)	170 (*45)
Mirrors, dual	flat & convex	flat & convex	flat & convex	flat &convex
Horn	electric	electric& air	electric & air	electric & air
Body, aluminum, interior size	#nom 5.5 m (18 ft) L /215cm (84 in) H /230cm (89 in) W	#nom 6 m (20 ft) L /215cm (84 in) H /230cm (89 in) W	#nom 6 m (20 ft) L /215cm (84 in) H /230cm (89 in) W	#nom 6.7 m (22 ft) L /215cm (84 in) H /230cm (89 in) W
Body, rear door(s)	#rollup 195 cm H x205 cm W	#rollup 195 cm H x205 cm W	#rollup 195 cm H x205 cm W	#rollup 195 cm H x205 cm W

NOTES: *Indicates option available. #Indicates alternate available below.

1. Class E alternate minimum axle and suspension rating, front/rear, LB - 8000/21000 - Tires, min 11R22.5G
2. Class F alternate minimum axle and suspension rating, front/rear, LB - 10000/23000 - Tires, min 11R22.5H rear/G front
3. Extended warranty coverage may be available on these vehicles. Refer to New Vehicle Guide warranty section.

Standard equipment includes: Coolant recovery; front towing devices; splash & stone guards; fan clutch; AM/FM radio; clearance lamps; seatbelts, rear end protection, cab heater & defrosters; body walls lined; steel scuff plate; body domelight; dock bumpers; tachometer (if diesel); electric power point, tinted glass, dual cab entry assist handles, gauges, predelivery serviced, engine shutdown (if diesel), day time running lights, anti-lock brake system on air brake vehicles, hub piloted wheels, air conditioning, remote jump start posts, electronic controlled engine and throttle control, (if diesel).

See Option Codes Listing on pages 30 and 31.

TABLE 8

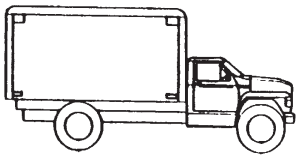
4X2 TRUCK, REFRIGERATOR VAN, W/CAB, 2 DOOR (see paragraph 3.5.8)

ITEM NO.	484	581	582
MINIMUM REQUIREMENTS			
TYPE/CLASS	VIII/C	VIII/D	VIII/E
PAYLOAD (APPROX. RANGE) KG (LBS)	5200 (9,500)	7000 (11,500)	7700 (12,500)
Style, cab/tilt hood	#Conv/2dr	Conv/2dr	Conv/2dr
GVWR/GCWR	21000/30000	25500/43000	28000/45000
Curb weight, approx. base, kg (lbs)	4300 (11,500)	4500 (13,000)	5000 (14,000)
Axle, min frt rating, lbs/seals	6000/oil	8000/oil	9000/oil1
Axle, min rear rating, lbs/spd/seals	15000/1 spd/oil	17500/1 spd/oil	19000/1 spd/oil1
Suspension, frt/rear, min, lbs	6000/15000	8000/17500	9000/190001
Cab to axle (CA), cm (in)	as reqd.	as reqd.	as reqd.
Frame, RBM, min, in-lb	440,000	475,000	620,000
Engine, type	*diesel	*diesel	*diesel
Engine CYL/GHP/gross torque, min	*6-8/175/420 turbo	*6-8/190/485 turbo	*6-8/205/520 turbo
Trans. type/speeds, min	*auto/4 spd	*auto/4 spd	*auto/4 spd
Differential	*std	*std	*std
Brakes, type	*hyd/power	full air	full air
Steering	power	power	power
Springs/shocks	aux rear/front	aux rear/front	aux rear/front
Wheels, type w/ dual rear	*disc	*disc	*disc
Tires, tubeless, min cap/tread (std)	9R22.5F/hwy*	10R22.5F/hwy*	10R22.5G1/hwy*
Alternator, rating cap. (H.D.)	*130 amp	*130 amp	*130 amp
Battery, CCA @ -18 C/reserve/diesel	1875/540 min	1875/540 min	1875/540 min
Battery, CCA @ -18 C/reserve/gas	535/115 min	535/115 min	535/115 min
Cooling and indicators	H.D.A.	H.D.A.	H.D.A.
Exhaust, type	horizontal	horizontal	horizontal
Fuel tank, capacity, L (gal)	170 (*45)	170 (*45)	*170(45)
Mirrors, dual	flat & convex	flat & convex	flat & convex
Horn	electric	electric & air	electric & air
Body, van, interior size m(ft)/rear dr style	4.2(14)/dble rear drs	4.0(16)/dble rear drs	6.1(20)/dble rear drs
Refrigeration control temperatures	2° to -23° ± 2°C	2° to -23° ± 2°C	2° to -23° ± 2°C

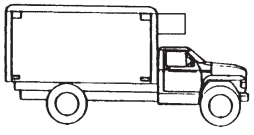
NOTES: *Indicates option available. #Indicates alternate available below.

1. Class E alternate minimum axle and suspension rating, front/rear, LB - 8000/21000 - Tires, min 11R22.5G
2. Extended warranty coverage may be available on these vehicles. Refer to New Vehicle Guide warranty section.

Standard equipment includes: Coolant recovery; front towing devices; splash & stone guards; fan clutch; AM/FM radio; clearance lamps; seatbelts; shelf type bumper w/step; cab heater & defroster; aluminum body; interior body lighting; interior scuff plate 30 cm high, 12 ga. steel, galvaneal or equal; tachometer (if diesel); electric power point, tinted glass, dual cab entry assist handles, gauges, predelivery serviced, engine shutdown (if diesel), daytime running light, anti-lock brake system on air brake vehicles, hub piloted wheels, air conditioning, remote jump starts posts, electronic controlled engine and throttle control, (if diesel).



See Option Codes Listing on pages 30 and 31.



TRUCK, VAN - OPTION CODES LISTING

X = Option available, S - Standard on specified item			TRUCK VAN 4X2				TRUCK REFRIG VAN 4X2		
OPTION CODES		REF. PARA.	474	571	572	573	484	581	582
A14	ALTERNATOR, MIN 145 AMP	3.4.2.3	X	X	X	X	X	X	X
AAG	AIR APP GAGE	3.4.19		X	X			X	X
AICE	AUTOMATIC TIRE CHAINS	3.4.10.5	N/A	X	X	X	X	X	X
ASI	AIR FILTER SERVICE INDICATOR	3.4.3.1	X	X	X	X	X	X	X
B12	BODY 12 FT	3.5.8					X		
B14	BODY 14 FT	3.5.7 & 3.5.8	X	X	X	X	S	X	
B16	BODY 16 FT	3.5.7 & 3.5.8	X	X	X	X	X	S	
B18	BODY 18 FT	3.5.7	S	X	X	X	X	X	X
B20	BODY 20 FT	3.5.7 & 3.5.8	X	S	S	X		X	S
B22	BODY 22 FT	3.5.7	X	X	X	S			X
B24	BODY 24 FT	3.5.7	X	X	X	X			
B26	BODY 26 FT	3.5.7	X	X	X	X			
BDD	DOUBLE RR DOORS FULL WIDTH AND HEIGHT	3.5.7.11	X	X	X	X	S	S	S
BFA	ALUMINUM (OVER WOOD) 1/8 IN DIAMOND PLATE	3.5.7.9	X	X	X	X			
BR	TRANSLUCENT ROOF	3.5.7.4	X	X	X	X			
BRT	INTERIOR ROPE TIES, FLUSH TYPE 36 TIES IN 3 TIERS	3.5.7.7	X	X	X	X			
BSD	SIDE DOOR (CURBSIDE) 30 IN X 71 IN	3.5.7.14	X	X	X	X	X	X	X
BTC	TOOL COMPARTMENT	3.1.1.14	X	X	X	X	X	X	X
BUA	BACKUP ALARM	3.4.23	X	X	X	X	X	X	X
BWD	BODY WIND DEFLECTOR FAIRING	3.5.7.1.3	X	X	X	X			
CEC	CALIFORNIA EMISSIONS CONTROLS	3.2.2	X	X	X	X	X	X	X
CNG	COMPRESSED NATURAL GAS ENGINE	3.4.1.2	X	X	X	X	X	X	X
COE	TILT CAB	3.4.12	X	X	X	X	X	X	X
CPT	CUSTOM PAINT EXTERIOR CAB	3.1.1.1	X	X	X	X	X	X	X
CRP	VAN BODY LOGISTICS POSTS (E TRACK TYPE SLOTS)	3.5.7.5	X	X	X	X			
CRT	CARGO CONTROL TRACKS, TWO TIERS BOTH SIDES	3.5.7.8	X	X	X	X	X	X	X
D1	DRIVER CONTROLLED DIFFERENTIAL LOCKOUT N/A WITH RA2	3.4.9.2	X	X	X	X	X	X	X
D3	REAR AXLE TRACTION CONTROL AUTOMATIC	3.4.9.2	X	X	X	X	X	X	X
DA	DELETE AIR CONDTIONING	3.4.25	X	X	X	X	X	X	X
DRLD	DAYTIME RUNNING LIGHTS - DELETE	3.4.2.4	X	X	X	X	X	X	X
DSS	DRIVER SUSPENSION SEAT (MECHANICAL ON HYD. BRAKED VEHICLES/AIR ON AIR BRAKED VEHICLES) INCLUDES FIXED PASSENGER SEAT	3.4.12.1	X	X	X	X	X	X	X
DSS2	DRIVER SEAT AND PASSENGER SEAT CONFORMS TO DSS	3.4.12.1	X	X	X	X	X	X	X
E5	V8 EXTRA POWER GAS ENG. MIN 230 NHP	3.4.1.2	X	X	X	X	X	X	X
ECF	ENGINE COOLANT FILTER	3.4.1.5	X	X	X	X	X	X	X
EDR	DRIVELINE RETARDER	3.4.11.4(A)			X	X			X
EH	BLOCK HEATER, OEM, 110V	3.4.1.9	X	X	X	X	X	X	X
EHM	ENGINE HOUR METER	3.4.22	X	X	X	X	X	X	X
EXB	ENGINE EXHAUST BRAKE	3.4.11.4(C)			X	X			X
FEX	EMERGENCY EQUIPMENT, EXTINGUISHER, AND TRIANGLES	3.4.28	X	X	X	X	X	X	X
FFP	FUEL FIRED ENGINE PREHEATER	3.4.1.10	X	X	X	X	X	X	X
FFS	HEATED FUEL/WATER SEPARATOR	3.4.1.9.1	X	X	X	X	X	X	X
FHD	HEAVY DUTY FRAME	3.4.7	X	X	X	X	X	X	X
FJP	AVIATION JET FUEL COMPATABILITY WITH DIESEL ENGINE	3.4.1.1	X	X	X	X	X	X	X
FLU	FORK LIFT USE, INCLUDES FORK LIFT REINFORCED FLOOR, AND THRESHHOLD PLATES	3.5.8.2.3	X	X	X	X	X	X	X
FPH	PLACARD HOLDERS PLATES	3.4.29	X	X	X	X	X	X	X
FRP	FIBERGLASS REINFORCED PLYWOOD BODY								
	CONSTRUCTION ILO ALUMINUM	3.5.7.1.1	X	X	X	X	X	X	X
FTC	FUEL TANKS, MIN 70 GAL TOTAL CAPACITY	3.4.3.2	X	X	X	X	X	X	X
FTD	FUEL TANKS, MIN 100 GAL TOTAL CAPACITY	3.4.3.2	X	X	X	X	X	X	X
H4	COOLANT PROTECTION TO -47C (-63F)	3.4.26.1	X	X	X	X	X	X	X
HTG	HYD TAILGATE, FOLD UP (N/A WITH CODE TTP)	3.1.1.11.1	X	X	X	X	X	X	X
HTGC	HYD TAILGATE, CART-STOP	3.1.1.11	X	X	X	X	X	X	X
HTGR	HYD TAILGATE, RAIL LIFT (NOT RECOMMENDED W/BDD)	3.1.1.11.3	X	X	X	X	X	X	X
HTGU	HYD TAILGATE, FOLD UNDER (N/A WITH CODE TTP)	3.1.1.11.2	X	X	X	X	X	X	X
HTGX	HYD TAILGATE, EXTRA CAPACITY (N/A WITH CODE TTP)	3.1.1.11	X	X	X	X	X	X	X
LED	LIGHT EMITTING DIODE LIGHTS	3.4.2.4	X	X	X	X	X	X	X
LPG	LIQUID PROPANE GAS	3.4.1.2	X	X	X	X	X	X	X
LSD	SYNTHETIC LUBE - DIFFERENTIAL	3.4.31	X	X	X	X	X	X	X

TRUCK, VAN - OPTION CODES LISTING

X = Option available, S - Standard on specified item			TRUCK VAN 4X2				TRUCK REFRIG VAN 4X2		
OPTION CODES		REF. PARA.	474	571	572	573	484	581	582
LST	SYNTHETIC LUBE - MANUAL TRANS.	3.4.31	X	X	X	X	X	X	X
MIL	MILITARY SERVICE MARKING, TAGS, DATA PLATES & FORMS	3.1.1.2	X	X	X	X	X	X	X
MS	MUD & SNOW TREAD TIRES (REAR AXLE)	3.4.10.1	X	X	X	X	X	X	X
PH	PINTLE HEIGHT 510 MM (20 IN)	3.1.1.8	X	X	X	X	X	X	X
PSM	PARTS LIST OR BOOK & SHOP REPAIR MANUAL(S)	6.6	X	X	X	X	X	X	X
PSMD	PARTS AND SERVICE MANUALS ON DISK	6.6	X	X	X	X	X	X	X
PSM2	PARTS AND SERVICE MANUALS - AIR FORCE	6.6	X	X	X	X	X	X	X
PSM3	PARTS AND SERVICE MANUALS - AIR FORCE	6.6	X	X	X	X	X	X	X
PTS	POWER OPERATED PTO ENGAGEMENT (N/A WITH MAN. TRANS.)	3.4.5.3					X	X	X
R35	REFRIGERATION UNIT HEATING CAP AT -25F TO MAINTAIN AT 35F	3.5.8.1					X	X	X-
RA2	REAR AXLE, 2 SPEED (N/A WITH D1)	3.4.9.1	X	X	X	X	X	X	X
RACS	INTEGRAL CASSETTE PLAYER	3.4.24	X	X	X	X	X	X	X
RDO	DIESEL ONLY REFRIGERATION UNIT (DELETES ELECTRIC STAND-BY)	3.5.8.3.4					X	X	X
RM3	MOTORIZED RIGHT SIDE MIRROR (INCLUDES RM4)	3.4.20	X	X	X	X	X	X	X
RM4	HEATED FLAT MIRRORS	3.4.20	X	X	X	X	X	X	X
ROD	ROLLUP OVERHEAD REAR DOOR	3.5.8.2.6	S	S	S	S	X	X	X
SAR	REAR AIR SUSPENSION	3.4.8.1		X	X	X		X	X
SC	SILICONE RUBBER HOSES, W/STAINLESS STEEL CLAMPS	3.4.1.8	X	X	X	X	X	X	X
SEH	COLD WEATHER PACKAGE (INCLUDES SEH A, B AND D)	3.4.1.9	X	X	X	X	X	X	X
SEHA	COOLANT HEATER INCLUDES JUNCTION BLOCK & CORD	3.4.1.9	X	X	X	X	X	X	X
SEHB	ENGINE OIL HEATER, INCLUDES JUNCTION BLOCK & CORD	3.4.1.9	X	X	X	X	X	X	X
SEHC	IN-LINE FUEL WARMER	3.4.1.9	X	X	X	X	X	X	X
SEHD	IN-TANK FUEL WARMER	3.4.1.9	X	X	X	X	X	X	X
SEHE	IN-LINE FUEL WARMER (ELECTRICAL)	3.4.1.9	X	X	X	X	X	X	X
SK	METRIC ODOMETER	3.4.19	X	X	X	X	X	X	X
SKS	SPARK ARRESTER, EXHAUST SYSTEM (W/GASOLINE ENGINES ONLY)	3.4.4.1	X	X	X	X	X	X	X
SLP	LOW PROFILE TIRES	3.4.10.1	X	X	X	X	X	X	X
SRP	RUSTPROOFING	3.1.1.3	X	X	X	X	X	X	X
STA	SPARE TIRE ASSEMBLY	3.4.10.3	X	X	X	X	X	X	X
STB	SPARE TIRE ASSEMBLY (REAR AXLE)	3.4.10.4	X	X	X	X	X	X	X
STC	CARRIER SPARE TIRE	3.4.10.2	X	X	X	X	X	X	X
T1	INTEGRAL OUTPUT RETARDER (WITH AUTOMATIC TRANSMISSION)	3.4.11.4(D)			X	X			X
T5	MANUAL TRANSMISSION 5 SPD MIN	3.4.5.2	X	X	X	X	X	X	X
T6	MANUAL TRANSMISSION 6 SPD MIN	3.4.5.2	X	X	X	X	X	X	X
T53	AUTOMATIC TRANS. MIN 5 SPD, MAX NET INPUT TORQUE 800 LB/FT CAP	3.4.5.1	X	X	X	X	X	X	X
TBE	ELECTRIC BRAKE CONTROLLER	3.1.1.9	X	X	X	X	X	X	X
TBT	BRAKE CONTROLS FOR USE FROM A TOWING VEHICLE	3.4.11.3		X	X	X		X	X
TJ	TOOLS, HYD JACK, WHEEL WRENCH & HNDL	3.4.16.1	X	X	X	X	X	X	X
TP	TWO-TONE PAINT, EXT. CAB (OEM STD)	3.1.1.1	X	X	X	X	X	X	X
VOL	AUXILIARY 24 VOLT SYSTEM W/TRAILER RECEPTACLE	3.4.2.8	X	X	X	X	X	X	X
WLP	WHEELS PAINTED SAME COLOR AS CAB	3.1.1.1	X	X	X	X	X	X	X
WN	INTERMITTENT WIPERS	3.4.14	X	X	X	X	X	X	X
XP	EXPORT PACKAGING	5.1	X	X	X	X	X	X	X
YD2	DIESEL ENGINE MIN 190 GHP, 485 LB/FT TORQUE, TURBO CHARGED	3.4.1.1	X	S			X	S	
YD3	DIESEL ENGINE MIN 205 GHP, 520 LB/FT TORQUE, TURBO CHARGED	3.4.1.1		X	S			X	S
YD4	DIESEL ENGINE MIN 210 GHP, 605 LB/FT TORQUE, TURBO CHARGED	3.4.1.1			X	S			X
YD5	DIESEL ENGINE MIN 250 GHP, 660 LB/FT TORQUE, TURBO CHARGED	3.4.1.1				X			

▶ 3. REQUIREMENTS.

3.1 STANDARD VEHICLE AND ACCESSORIES.

Except as specified in 3.1.1 through 3.1.1.16, the vehicle, components, assemblies, and accessories to be delivered under the contract shall be standard or optional items, which meet or exceed the requirements of this standard. Except as specified in 3.1.1 through 3.1.1.22, no removal, substitution or alteration of the chassis manufacturer's standard or optional chassis model components shall be made. All chassis items shall be as represented in the chassis manufacturer's technical data book. Special bodies or mounted equipment shall be as represented in the body and equipment manufacturer's technical data. Capacities shall not exceed those published in the manufacturers' technical data. Technical data shall be limited to specifications and technical material, identical to that furnished to the authorized company representatives for selection of vehicle models and components, and shall be available to the engineering offices of the procuring activity, prior to delivery of the items. The chassis model furnished shall be not older than the chassis manufacturer's current model on the date of invitation for bids.

3.1.1 SPECIAL REQUIREMENTS.

In addition to the standard vehicle and components specified in 3.1, the vehicle shall be furnished with special equipment as specified herein.

3.1.1.1 TREATMENT AND PAINTING.

The vehicle body, including compartments, doors, and tool boxes, except bright finish aluminum and stainless steel, shall be treated and painted in accordance with MIL-HDBK-1223. The manufacturer's standard treatment and painting for cab and chassis is acceptable. When code CPT is specified, a custom or Federal Standard 595 color shall be provided. Unless otherwise specified, the exterior color shall be selected by the manufacturer from one of the manufacturer's standard, non-metallic light or medium colors. When specified (see 6.2), color selection will be made after contract award from the standard color charts to be supplied by the manufacturer. When code TP is specified, any of the manufacturer's production multitone paint combinations may be selected. When code WLP is specified, the wheels shall be painted the same color as the cab.

3.1.1.2 MILITARY MARKING, AND DATA PLATES AND FORMS.

When code MIL is specified, marking, data plates and DD Form 250s shall be provided in accordance with the requirements of the receiving military service. Unless otherwise specified, a decal, sticker, or label shall provide at least the following information: contract number; purchase order number; date of delivery month and year; and the warranty time, in months and miles (GSA Form 1398). When specified (see 6.2), concealed markings shall be furnished.

3.1.1.3 RUSTPROOFING.

When code SRP is specified, the vehicle shall be rustproofed in accordance with FED-STD-297.

3.1.1.4 DRAIN PLUGS.

Drain plugs installed in manual transmissions, transfer case and rear axles shall be of the permanent magnet type.

3.1.1.5 WOOD TREATMENT.

Unless otherwise specified, the manufacturer's standard wood treatment is acceptable. Soft wood shall be pressure treated with a wood preservative. Hardwood need not be treated. When specified, wood shall be treated in accordance with MIL-HDBK-1223.

3.1.1.6 TOWING DEVICES.

Towing devices consisting of two hooks, loops, eyes or pins or the chassis manufacturer's standard single center mounted eye or pin shall be mounted on the front of the vehicle. All towing devices shall be frame rail mounted or reinforced back to each frame rail. When code RTH is specified, additional towing devices shall be mounted on the rear of the vehicle.

3.1.1.7 WHEEL SPLASH AND STONE THROW PROTECTION.

Type III stakes, type IV dumps, type VII vans, and type VIII refrigerator vans shall have rubber mud flaps to the rear of the rear wheels. Type II tractors shall have rigid quarter fenders to the front of the rear wheels and rubber mud flaps to the rear of the rear wheels. Tractor mud flaps and their extension supports shall be readily removable, to increase landing wheel clearance, without the use of hand tools. A metal strip not less than 3.2 mm (0.125 in) thick and not less than 25 mm (1 in) wide, extending the entire width of the mud flap, shall be installed to prevent the bolt heads or bolt nuts from damaging the mud flap. As an alternate method of attaching the mud flaps, tabs or clips with minimum surface contact dimensions of 25 mm (1 in) high by 32 mm (1.25 in) wide by 2.4 mm (0.094 in) thick shall be furnished at each bolt. All tilt cabs shall have rubber mud flaps to the rear of the front wheels. All splash shield and mud flap installations, front and rear, shall conform to the rear splash and stone throw protection provisions of SAE J682. The quarter fenders on tractors need extend down only to the height of the centerline of the rear axle. Splash shields shall have no advertising or logos, except that of chassis or body manufacturer.

3.1.1.8 TRAILER TOWING PACKAGE.

When code TTP is specified, a trailer towing package shall be provided. Note: option not available when code HTG, HTGU, HTGX, or BDS is specified. The trailer towing package shall consist of a pintle, safety chain attachment devices, a lighting receptacle, a trailer brake control system (see 3.4.11.2), and associated reinforcements and wiring, and shall be installed on

the rear of the vehicle. The pintle shall be of the rotating type conforming to MS 51118-1. The pintle shall be installed on the chassis frame with reinforcements to transfer a vertical tongue load of not less than 1815 kg (4,000 lb) and a horizontal drawbar load of not less than 178 kilonewtons (kn) (40,000 lb) directly to the chassis rails. Except on type II tractors, the rear most portion of the pintle shall be forward, but not more than 100 mm (4 in) forward, of the rear most part of the vehicle. Two trailer safety chain attachment devices, one adjacent to each side of the pintle, shall be provided. Each attachment device shall provide an ultimate strength at least equal to the GVW of the truck furnished. The attachment devices shall be capable of accommodating a standard grab hook [116 mm (4-9/16 in) wide, 30 mm (1-3/16 in) thick, 19.8 mm (25/32 in) throat width)] for a 16 mm (5/8 in) chain. The lighting receptacle, conforming to SAE J560, with its conductors connected and color-coded or number coded, shall be mounted in a readily accessible location near the pintle. The lighting receptacle on type IV dump trucks shall be located to prevent damage during dumping of the cargo. When code PH is specified, the pintle height, measured to the centerline at the pintle, shall be 510 mm (+125 mm, - 0) (20 in (+5, -0)). The pintle shall be installed with bracket reinforcements to transfer pintle loads directly to the chassis rails. The installation shall be capable of withstanding towed loads equal to the GVW of the truck without permanent deformation. Note: option not available when code HTG, HTGU, or HTGX is specified. When code MTL is specified, a trailer lighting cable conforming to SAE J1067 shall be provided. The cable shall be coiled and shall be not less than 2800 mm (110 in) long when fully extended. Both ends of the cable shall be equipped with a round plug conforming to SAE J560. The plugs shall be equipped with a grip for withdrawing from the connector sockets. The cable shall be packaged and stowed in the vehicle tool compartment. Code MTL is not required for Type II Truck Tractor unless a trailer towing package is specified.

3.1.1.9 ELECTRIC TRAILER BRAKE CONTROLLER.

When code TBE is specified, an electric trailer brake controller shall be provided. The controller shall be installed in the truck cab and wired through the lighting socket. The controller shall operate on the 12-volt electrical system of the vehicle and shall include the load control, hand lever, and accessories.

3.1.1.10 SPARK ARRESTER.

As specified herein (see 3.4.4.1), the vehicle shall be furnished with an exhaust system spark arrester.

3.1.1.11 HYDRAULIC TAILGATE (TYPES III, VII AND VIII ONLY).

When specified (see 6.2), the vehicle shall be equipped with an electric motor driven hydraulic tailgate. Unless otherwise specified (see 6.2), the hydraulic tailgate shall have a rated capacity of not less than 910 kg (2,000 lb) for type III, VII and VIII. The hydraulic tailgate for type VI shall have a rated capacity of not less than 590 kg (1,300 lb). All hydraulic cylinders shall be provided with flow restrictors in the down port of the cylinders to prevent the tailgate from falling rapidly in the event of a hydraulic system failure. The tailgate platform shall be of the ramping type and shall have a depth of not less that 810 mm (32 in) exclusive of the ramp. The ramp shall taper down to ground level to facilitate loading with a wheeled handcart. Platform loading area shall be of nonskid sheet steel. The tailgate shall have devices for holding the platform is stowed position for vehicle travel. When the tailgate is in position for loading the vehicle, the clearance between the rear edge of the vehicle and the tailgate shall be not more than 19 mm (0.75 in) and the tailgate shall be on the same level as the body floor. Controls shall be mounted outside the body on the curbside of the vehicle and shall include an electric control station with environmentally sealed connections, that the operator can reach easily while standing on the ground, or riding on the platform. The vehicle ignition switch or a separate switch in the driver's compartment shall allow the driver to disconnect the power source to the tailgate. A 150-ampere minimum, automatic reset circuit breaker shall be furnished with the electric system of the tailgate, to protect the electric system of the vehicle. A minimum of 2-gauge wire shall be furnished on the power cables for maximum operating efficiency and increased electrical component life. A rust-proof enclosure shall be furnished to protect the pump motor from dirt and weather. Self-lubricated bearings shall be furnished on all load bearing rollers and hinges. A decal or plate describing operation of the hydraulic tailgate shall be provided in close proximity to the hydraulic tailgate controls (see 3.1.1.13). When code HTGX is specified, the tailgate shall have a rated capacity not less than 1350 kg (3000 lb) and a depth of not less than 1500 mm (60 in). When code HTGC is specified, a spring loaded cart-stop retention system shall be furnished on the end of the platform. The cart-stop shall spring up to a vertical position when the foot control is depressed. The cart-stop may be manually returned (with a maximum force of 25 pounds required) to the plane of the horizontal tailgate platform and automatically lock in place. The cart-stop shall remain locked in horizontal or vertical position until the foot control mechanism is depressed. All hydraulic lines shall be grommeted where they are routed through walls and supports and furnished with clamps for protection from damage. Hydraulic tailgates must conform to FMVSS-223 and 224.

3.1.1.11.1 REAR FOLD TAILGATE.

When code HTG is specified, the tailgate shall fold vertically against the rear of the vehicle for travel. All tailgate operations shall be hydraulically powered or metered, providing for raising, lowering, folding and unfolding without manual assistance. The tailgate platform width shall be not less than 2130 mm (84 in) for type VII van and type VIII refrigerator van and not less than 2290 mm (90 in) for type III stake. For type VI maintenance/ line body, the tailgate platform width shall be not less than 4 inches wider than the floor width, allowing recessed lights to be

located outside of the vertical tailgate upright posts. Rear bumper and additional rear end protection need not be furnished.

3.1.1.11.2 FOLD-UNDER TAILGATE.

When code HTGU is specified, the tailgate shall manually fold under the vehicle for travel and manually unfold for use. Hydraulically powered raising and metered lowering shall be provided. The tailgate platform width shall not be less than 2135 mm (84 in). Rear bumperettes extending to the rear beyond the stowed tailgate shall be provided on each side of the rear, beyond the 2135 (84 in) platform width. Additional rear end protection need not be furnished. (A fold under tailgate is available on vans only with a van roll-up rear door.) If a fold-under tailgate is furnished on a van body with swing type doors, the top of the tailgate in the elevated position will be up to 3 inches below the level of the van body floor, due to door locking hardware.

3.1.1.11.3 RAIL LIFT TAILGATE (TYPES III, VII and VIII ONLY)

When code HTGR is specified, the tailgate shall be a body mounted rail lift type conforming to 3.1.1.11.1. A rear under-ride guard shall be provided. When cable or chain is utilized in the tailgate mechanism, an emergency brake shall be required to automatically stop and hold the fully loaded platform in the event or loss or tension on cable or chain. Van bodies may only be furnished with rail lift tailgates if the van is equipped with rear roll-up doors.

3.1.1.12 HYDRAULIC FLUID IDENTIFICATION PLATE.

When a body hydraulic system is provided, an identification plate or decal shall be furnished. The plate shall be installed near the filler cap and shall identify the type of hydraulic fluid to be used. (See 3.1.1.13.)

3.1.1.13 DECALS AND DATA PLATES.

The hydraulic tailgate operating instructions, the hydraulic fluid identification information and the power takeoff caution notice shall be on a standard decal or plate from the supplier of that item.

3.1.1.14 TOOL BOX.

When code BTC is specified, a toolbox shall be provided. The toolbox shall provide for storage in addition to that required by 3.4.16. Minimum dimensions shall be 457 mm (18 in) by 457 mm (18 in) by 609 mm (24 in). A door opening size of not less than 482 mm (19 in) by 330 mm (13 in) shall be furnished. The toolbox shall be fabricated of not less than 14 gauge (2.657 mm) (0.1046 in) steel or of equivalent strength aluminum. The toolbox shall be weatherproof and shall provide for locking. The toolbox shall be mounted as close as possible to the rear of the cab, on the curbside of the vehicle.

3.1.1.15 BRUSHGUARD.

The 4x4 vehicle shall be equipped with a radiator and headlamp brushguard. When the headlamps are recessed into and protected by the front bumper, a headlamp brushguard is not required.

3.1.1.16 4X4 CONVERSION.

The chassis manufacturer's standard 4x2 truck chassis may be modified to provide all-wheel drive conforming to the requirements specified herein if:

(a) The conversion axle manufacturer specifically approves and certifies that all such modifications meet the design requirements and standards of the conversion axle manufacturer. Certification shall be based on both design analysis and proving ground test reports.

(b) The chassis manufacturer's front axle rating before conversion is not exceeded by the conversion axle to be installed.

(c) Components used in the all-wheel drive conversion are of current production.

(d) Components used in the all-wheel drive conversion are approved for the conversion application by the component manufacturers.

(e) The converted vehicle is certified to conform to Federal Motor Vehicle Safety Standard No. 121 by the intermediate or final manufacturer.

(f) Replacement headlights, if required to be added, shall meet the height requirement of not less than 560 mm (22 inches) and not more than 1370 mm (54 inches), measured above the road surface, in conformance with Federal Motor Vehicle Safety Standard No. 108. Replacement headlights shall be equivalent in mounting, protection, range and precision of adjustment to the chassis manufacturer's original standard headlights.

(g) Unused headlight cavities are covered in a neat workmanlike manner, treated and painted to match the chassis cab color with treatment and painting equivalent to the chassis cab manufacturer's process for the remainder of the chassis cab.

(h) Complete installation drawings for the specific chassis are available.

(i) Warranty and parts service is available at a facility no more distant than the chassis manufacturers nearest authorized dealer.

When code STF is specified, the frame shall be staggered behind the cab to lower the height of the rear frame by the amount the frame was raised to accomplish the 4X4 conversion.

3.1.1.17 ELECTRICAL COMPONENTS FOR TRUCK BODIES AND ACCESSORY EQUIPMENT.

Truck bodies and accessory equipment shall conform to TMC RP105B, RP 111B, RP 112, RP 113A, RP 114A and RP 120A when applicable.

3.1.1.18 BRAKE LIGHTS.

At least one pair of brake lights shall override the four-way emergency flasher or the two systems shall be independent of each other. Modifications to the manufacturer's standard product to accommodate this requirement shall not compromise conformance to any Federal Motor Carrier Safety Regulation referenced herein or to any Federal Motor Vehicle Safety Standard. If additional lights are added to the vehicle, the lights shall be selected from the chassis manufacturer's

standard matching hardware. On truck tractors, the brake lights need to override the four-way flasher only when coupled to a semitrailer, in accordance with TMC RP 118A.

3.1.1.19 RESERVED.

3.1.1.20 CENTRAL TIRE INFLATION SYSTEM.

When code CTIS is specified, a central tire inflation system shall be provided. The system shall include but not be limited to the following components:

(a) 850 L/min (30 CFM) air compressor with 14 liter engines and above; 453 L/min (16 CFM) with engines between 10 liters and 14 liters; and 373 L/min (13.2 CFM) with engines less than 10 liters
(b) Compressor with automatic moisture ejector
(c Axles compatible with installation of the Central Tire Inflation System
(d) 10 hole disc type wheels, all axles
(e) Front axle-standard profile tires with highway type tread (low profile acceptable on 18000/20000 lb axles)
(f) Rear axle-standard profile tires with traction type tread
(g) Electronic Control Unit (ECU)
(h) Operator Control Panel (OCP)
(i) Pneumatic Control Unit (PCU)
(j) Distribution Manifold (DM)
(k) Wheel Valves
(l) Pressure Switch
(m) Speed Sensor
(n) Air Lines
(o) Wiring Harness

The system shall allow the driver to adjust vehicle tires to any of four pre-set tire pressures (highway and off-highway for both loaded and unloaded conditions) on up to three separate channels (steer/drive/trailer) and shall include an emergency key and a run flat key. System shall provide for manual tire inflation/deflation capability, an air priority system, and speed/ pressure control, and warning at OCP.

3.1.1.21 AIR TRANSPORTABILITY.

When code ATR is specified, air transportability for class C, D and E vehicles shall be air transportable in C-130, C-141, C-5, and C-17 aircraft in accordance with the requirements of MIL-HDBK-1791 and AFSC Design Handbook DH-1-11. Removal or relocation of mechanically attached (nonwelded, nonriveted, etc.) components with common tools, requiring not more than 1 man-hour total to remove, relocate and tiedown; and not more than 1 man-hour total to return the vehicle to its original, as opposed to reduced, configuration; shall be acceptable. The self-mobility of the vehicle shall not be affected by reducing its configuration. Tiedowns for removed or relocated equipment shall be furnished. The curb weight of the vehicle shall not exceed 4540 kg (10,000 lb) on the front axle and 9070 kg (20,000 lb) on the rear tandem axle. In addition to the requirements 3.2.6 or 3.2.6.1, as applicable, the rated capacity of the axles and suspension system shall be not less than 1.25 times the load imposed on each by the curb weight of the vehicle. The vehicle shall be air transportable as described above without any other special provisions and without any shoring the vehicle shall not be delivered to the Government in its reduced configuration. Drawings and data will be required to be submitted by the contractor. Government approval of the data (120 days) and then comparison of the vehicle to the approved data will be required before acceptance of the vehicle.

3.1.1.22 LIFTING AND TIEDOWN ATTACHMENTS.

When air transportability is specified or when or when code LTD is specified, the vehicle shall be equipped with lifting and tiedown attachments. Lifting and tiedown attachments shall conform to type II or type III of MIL-STD-209J, replace "maximum shipping weight (MSW)" wherever it appears with "curb weight." A transportation plate conforming to composition A (class 1 or 2) or composition C of A-A-50271 shall be provided. The transportation plate shall be inscribed with a diagram showing the lifting attachments and lifting slings, the capacity of each Attachment, and the required length and size of each sling cable. A silhouette of the vehicle showing the center of gravity shall be provided on the transportation plate. Stenciling or other suitable marking shall identify tiedown attachments. Tiedown markings shall clearly indicate that the attachments are intended for the tiedown of the equipment on the carrier.

3.2 GENERAL DESIGN.

3.2.1 FEDERAL MOTOR VEHICLE SAFETY STANDARDS.

The vehicle furnished accessories shall comply with all Federal Motor Vehicle Safety Standards in effect on the date of manufacture.

3.2.2 AIR POLLUTION CONTROL.

The vehicle shall comply with the Environmental Protection Agency Regulations governing Control of Air Pollution from New Motor Vehicles and New Motor Vehicle Engines in effect on the date of manufacture. When code CEC is specified, vehicles with a final destination of California or opt-in states shall comply with State of California regulations governing air pollution control in effect on the date of manufacturer.

3.2.3 SOUND LEVEL.

The cab interior sound level shall not exceed 84db(A) when measured in accordance with Federal Motor Carrier Safety Regulation 393.94. The vehicle exterior sound level shall conform to the Environmental Protection Agency Noise Emission Standards for Transportation Equipment, Medium and Heavy Trucks.

3.2.4 CURB WEIGHT.
The curb weight is defined as the empty weight (no payload included) of a fully equipped truck. Curb weight shall include the chassis-cab, body or fifth wheel for Type I truck, all attached devices, equipment, and full complement of fuel, lubricants, and coolants.

3.2.5 GROSS VEHICLE WEIGHT.
The gross vehicle weight (GVW) shall consist of the curb weight, operator and passenger weight (computed at 80 kg (175 lb each) and a payload to provide not more than the specified GVWR.

3.2.6 WEIGHT DISTRIBUTION.
Except as specified in 3.2.6.1 and 3.2.6.2, the distribution of GVW for the purpose of establishing suspension, axle and tire capacities shall be determined with the payload uniformly distributed over the load area. For type II tractor furnished with a sliding fifth wheel, the weight distribution shall be determined with the sliding fifth wheel in its most forward position of adjustment.

3.2.6.1 SPECIFIED GAWR.
When specified (see 6.2), front and rear GAWR shall be designated and 3.2.6 does not apply. For Class D, GVWR shall not exceed 11,800 kg (26,000 lb) and no commercial driver's license shall be required for driver, without written approval of requisitioner. For Class F, GVWR shall not exceed 15,000 kg (33,000 lb) for excise tax; except Type II truck tractors; without written approval of requisitioner.

3.2.6.2 SNOWPLOW PROVISIONS.
When a snowplow is specified (see 3.5.4.8), or when code MPR is specified to accommodate future installation of a snowplow, a stationary grille and the following GAWR shall be furnished. The front GAWR shall be not less than the load imposed by the snow plow (or a 860 kg (1,900 lb) load located 1520 mm (60 in) forward of the centerline of the front axle when snow plow provisions but not a snowplow are specified) plus a uniformly distributed payload over the load area, both totaling a payload to provide not less than the specified GVWR. The rear GAWR shall be not less than the load imposed without the snowplow by a uniformly distributed payload over the load area to provide not less than the specified GVWR. Note: when code MPR or MPS is specified, a significant reduction in payload will be experienced when a snowplow is installed.

3.2.7 GROSS COMBINATION WEIGHT.
Gross combination weight (GCW) shall consist of the truck or truck tractor curb weight, operator and passenger weight (computed at 80 kg (175 lb) each), and the weight of a trailer loaded to provide not less than the specified GCWR. The fifth wheel shall be located so that with the truck tractor loaded to GVW, the load rating of the chassis components are not exceeded.

3.2.8 RATINGS.
Vehicle ratings shall be the manufacturer's published ratings. Component and vehicular ratings shall not be raised to meet the requirement of this specification. Minimum GVW and GCW ratings shall conform to Figure 1 for the specified class of vehicle. All individual components, including engine, transmission, driveline and drive axle, shall have a minimum GCWR specified for each class.

Figure 1 GVW and GCW Minimum Ratings

VEHICLE CLASS	GVW, KG	(POUNDS)	GCW, KG	(POUNDS)
C	9,500	(21,000)	13,650	(30,000)
D	11,500	(25,500)	19,500	(43,000)
E	12,700	(28,000)	20,400	(45,000)
F	14,500	(32,000)	24,950	(55,000)
G	15,900	(35,000)	27,200	(60,000)

3.2.9 OVERALL WIDTH.
The overall width of the vehicle, exclusive of tires, wheelnuts and safety related items such as mirror, lights, and reflectors shall be not more than 2440 mm (96 inches). The width over the tires shall be not more than 2540 mm (100 inches).

3.2.10 ACCESSIBILITY.
The design of the vehicle and optional equipment shall permit access for routine servicing and shall permit access for replacement and adjustment of component parts and accessories with minimal disturbance of other components and systems.

3.2.11 RECOVERED MATERIALS/REGULATORY REQUIREMENTS.
In accordance with Section 23.403 of the Federal Acquisition Regulations, the Government's policy is to acquire items composed of the highest percentage of recovered materials practicable, consistent with maintaining a satisfactory level of competition without adversely affecting performance requirements or exposing suppliers employees to undue hazards from the recovered materials. The term "recovered materials" means materials that have been collected or recovered from solid waste and reprocessed to become a source of raw materials, as opposed to virgin raw materials. None of the above shall be interpreted to mean that the use of used or rebuilt products is allowed under this document. The use of re-refined oil shall not be prohibited. This does not prohibit vehicle manufacturers from using performance criteria for acceptable oil. Any re-refined oil products shall meet the performance criteria of the vehicle and component manufacturers.

3.3 PERFORMANCE.

3.3.1 SPEEDS AND GRADEABILITY.

High and low speed requirements shall be met with the truck tractor loaded to specified GCW and with all other trucks loaded to specified GVW. Performance requirements for 4x4 vehicles shall be met with front drive disengaged and with front wheel drive hubs unlocked.

3.3.1.1 HIGH SPEED GRADEABILITY.

Unless otherwise specified, the vehicle shall ascend the standard continuous grades specified in Figure 2 at 80 kilometers per hour (km/h) (50 miles per hour (mph)). When the optional higher power engine is specified (see 6.2), the vehicle shall ascend the optional grades specified in Figure 2 at 80 km/h (50 mph). Gradeability requirements shall be met with the main transmission in direct drive or overdrive and, when a multi-speed axle is furnished, with the axle in high-speed range. Gradeability shall be verified with calculations in accordance with SAE J2188 (see 6.3).

Figure 2 Gradeability

VEHICLE REQUIRED GROSS WEIGHT, kg (pounds)			STANDARD percent of grade		OPTIONAL percent of grade	
Truck GVWR	Tractor GCWR		Truck	Tractor	Truck	Tractor
9,500(21,000)	-	-	2.5	-	3.0	-
11,500(25,500)	-	-	2.5	-	2.9	-
12,700(28,000)	-	-	2.3	-	2.7	-
14,500(32,000)	-	-	2.2	-	2.6	-
15,900(35,000)			2.1		2.4	
	20,400	(45,000)	-	1.3		1.7
	24,950	(55,000)	-	0.8		1.3
	27,200	(60,000)		.7		1.0

3.3.1.2 LOW SPEED.

Low speed for vehicles with a manual transmission shall be calculated with the engine operating at not less than 35 percent of recommended governed speed, and shall provide not more than the vehicle speed (mph) specified in Figure 3 for the corresponding number of available forward speed.

Figure 3 Vehicle Low Speed Requirement

NUMBER OF FORWARD SPEEDS	MAXIMUM LOWSPEED, KM/H (MPH)
5 or 6	7.2(4.5)
7 or 8	5.6(3.5)
9 or 10	4.8(3.0)4x2
	4.0(2.5)4x4

3.3.1.3 MAXIMUM GEARED SPEED

The maximum geared speed at engine governed speed shall be not less than 75 mph for 4x2 and not less than 65 mph for 4x4. Conformance to geared speed specified shall be determined by calculating in accordance with the following formula:

Maximum geared speed (km/h) = Governed speed (rpm x 1.609)

Total gear reduction x Tire factor (see 6.3)

Engine power to attain the designated geared speed shall be verified with calculations in accordance with SAE J 2188.

3.3.2 SERVICE BRAKES.

On all vehicles except type II truck tractor, the service brakes shall stop the vehicle, loaded to specified GVW, within the stopping distance requirements of Federal Motor Carrier Safety Regulation 393.52. The service brakes on type II truck tractor shall stop the tractor-semi-trailer combination, loaded to specified GCW, within the stopping distance requirements of Federal Motor Carrier Safety Regulation 393.52. All service brakes shall be of the self-adjusting type.

3.4 CHASSIS COMPONENTS.

3.4.1 ENGINE.

The engine furnished for the specified vehicle class shall be the chassis manufacturer's standard or optional engine for the commercial model truck that meets or exceeds the requirements of this specification.

3.4.1.1 DIESEL ENGINE.

Unless otherwise specified (see 3.4.1.2), the vehicle shall be equipped with a liquid cooled, compression ignition, diesel engine, electronically controlled, with not less than four cylinders. Engine net power figures used in performance prediction calculations shall be determined in accordance with SAE J1349. In addition, when code FJP is specified, the engine shall operate satisfactorily using grade JP-5 fuel conforming to MIL-T-5624 under emergency, short duration conditions and on grade JP-8 fuel conforming to MIL-T-83133 under normal conditions. A power loss when operating on JP-5 or JP-8 is acceptable. An electronically controlled engine shall be provided. When code YD2 through code YD11 is specified, optional diesel engines shall be provided as shown in figure 4. Diesel engines shall meet the optional percent of gradeability for the specified gross weight as shown in figure 2. When code CNGD is specified, the OEM's Compressed Natural Gas/Diesel dual fuel engine shall be furnished.

Figure 4 Optional Engines (increased performance)			
OPTION CODE	MIN GHP	MIN PEAK TORQUE	GVW/GCW LBS.
YD2	190	485 lb-ft	21000/
YD3	205	520 lb-ft	26000/
YD4	210	605 lb-ft	28000/
YD5	250	660 lb-ft	32000/
YD6	275	800 lb-ft	28k - 32000/45k - 55000
YD11	340	1150 lb-ft	35000/60000

3.4.1.2 GASOLINE ENGINE.

When code E5 is specified, the vehicle shall be equipped with a liquid cooled, internal combustion, four-stroke cycle gasoline engine with not less than eight cylinders. The engine furnished shall produce the required performance when operated on unleaded fuel with a research octane rating of 91, at an engine speed not more than the manufacturer's recommended operating speed. The engine shall be capable of warranted operation on unleaded fuel, when used in accordance with the operator's manual. Engine net power used in performance prediction calculations shall be determined in accordance with SAE J1349. Unless otherwise specified, vehicles for overseas use shall be capable of accepting and operating on unleaded gasoline. When code LF is specified, export vehicles shall be capable of accepting and operating on leaded gasoline. When code LPG is specified, an OEM liquefied petroleum gas (propane) conversion shall be provided. When code CNG is specified, an OEM dedicated natural gas conversion shall be provided.

3.4.1.3 OIL FILTER.

A full flow or combination full flow and bypass oil filter with replaceable element shall be furnished.

3.4.1.4 GOVERNOR.

An engine governor shall be furnished and set and sealed to limit the engine to the engine manufacturer's recommended operating speed.

3.4.1.5 COOLING SYSTEM.

The chassis manufacturer's heaviest duty cooling system for the model provided shall be supplied. The cooling system shall include a surge tank or a coolant recovery reservoir of not less than 1.89 L (two quart) capacity. On tilt cab models, a radiator servicing access door shall be provided if needed to allow verification of the coolant level without tilting the cab. For cooling system servicing see 3.4.26.1. When code ECF is specified, an engine coolant filter shall be provided. Radiator furnished shall conform to TMC RP 325.

3.4.1.6 COOLANT TEMPERATURE CONTROL.

Thermostatic control of engine coolant temperature shall be provided. On diesel engine driven vehicles, the control shall include complete thermostatic control of all coolant flow through the radiator.

3.4.1.7 FAN CLUTCH.

A fan clutch shall be provided. The fan clutch shall reduce the fan speed automatically when the fan is not required for engine cooling. The fan clutch shall be asbestos free.

3.4.1.8 SILICONE RUBBER HOSES.

When code SC is specified, silicone rubber radiator and heater hoses shall be furnished, with stainless steel constant torque hose clamps or worm gear type with inner liner, in accordance with TMC RP 303 B.

3.4.1.9 POWER PLANT HEATERS AND FUEL WARMER.

When code EH is specified, an OEM engine block heater(s) shall be provided.

When code SEH is specified, a coolant heater (A), an engine oil heater (B), and fuel warmers (C), (D) and (E) shall be provided as individually specified. Heaters shall operate on 115/120-volt alternating current (ac), and shall be wired through a junction block, including fuse or circuit breaker, to a single three-pronged (male), weather proof slave receptacle for receiving external power and grounding the vehicle. The receptacle shall be located on the front or streetside of the vehicle, as near the cab as practicable. A three-wire connecting cable, not less than 7600 mm (25 feet) long and of adequate line capacity to supply power for all heater units simultaneously, shall be furnished. Connecting cable shall include a matching female connector at the vehicle end and a standard three-pronged (two power plus one ground) male connector at the other end. Electrical apparatus shall conform to Federal Motor Carrier Safety Regulation 393.77(c)(7). The electrical insulation of the connecting cable shall withstand normal operating stresses in low ambient air temperatures (down to -51°C (-60°F) without cracking or loss of dielectric capacity. All heater lead wires shall be installed without interfering with vehicle component operation and without loose excess wire. Provisions for stowage of the cable shall be provided in the vehicle cab. Heaters and fuel warmers shall be furnished as follows:

(A) A coolant heater, 1000-watt (W) minimum rating, shall be installed in the engine block or in the lower coolant inlet hose.

(B) An oil pan heater of the permanent external surface mount, or immersion type that meets the following requirements shall be installed.

(1) Immersion type - not more than 11 W/L (10 watts per quart) or less than 5W/L (5 watts per quart) heating capacity.

(2) Surface type - not more than 2.8 watts per square centimeter (W/cm2) (18 watts per square inch) or less than 1.4 watt/sq. cm (9 watts per sq. in.) heating capacity.

(3) Thermal balance design or thermostat control providing for uninterrupted operation.

(4) Provision for mounting below minimum service oil level.

One of the following type fuel warmers or preheaters shall be furnished, if specified.

(C) An in-line fuel warmer or preheater unit shall be provided on diesel engine driven vehicles to prevent clogging of fuel filters due to wax crystallization in the fuel. The unit shall use engine coolant to transfer sufficient heat to the diesel fuel to heat it from an inlet temperature of inlet temperature of -40°C (-40°F) to an outlet temperature of -13°C (9°F), with a fuel flow rate not less than the maximum fuel demand of the engine fuel system. A coolant shutoff valve shall be provided for the coolant inlet side of the fuel warmer unit. The unit shall not cause heating of the fuel above 27°C (80°F) under any possible condition.

(D) An in-tank fuel warmer or preheater unit shall be provided on diesel engine driven vehicles. The unit shall use engine coolant to transfer heat to the fuel in one fuel tank. The warmer shall not cause heating of any fuel above 27°C (80°F) under any possible condition, shall not disable or cause elimination of the fuel gauge sending unit and shall not violate 3.2.1 or any Federal Motor Carrier Safety Regulation. A coolant shut off valve shall be included.

(E) An in-line fuel warmer of the electrically heated type shall be provided which meets the performance requirements of 3.4.1.9 (c).

3.4.1.9.1 HEATED FUEL AND WATER SEPARATOR.

When code FFS is specified, the fuel and water separator required by 3.4.3.3 shall be the heated type.

3.4.1.10 FUEL FIRED ENGINE PREHEATER.

When code FFP is specified, for diesel engine driven vehicles, a diesel fuel fired engine water heater shall be provided to preheat the engine. The heater shall include a timer, a thermostat and a circulating pump, and shall be connected to the engine coolant system. The heater shall be capable of starting and operating at -51°C (-60°F) and shall heat the engine to 4°C (40°F) from -51°C (-60°F) in not more than 1 hour. The system shall be equipped with a start light, visible to the driver, to indicate that the preheater is operating.

3.4.1.11 ELECTRONIC THROTTLE CONTROL.

An electronic controlled throttle with quick release shall be furnished, on electronically controlled engines.

3.4.2 ELECTRICAL SYSTEM.

The electrical system shall be in accordance with Federal Motor Carrier Safety Regulations 393.27 through 393.31 and 393.33.

3.4.2.1 STARTING SYSTEM.

For diesel engine driven vehicles, a 12-volt starting system, with 12-volt direct current (dc) lighting system shall be furnished. Engine starting equipment shall include an ether starting system or electric grid heater. If an ether system is furnished in lieu of a grid heater, it shall be of the measured shot type. The measured shot type ether system shall be key operated or manually operated from the driver's compartment, and shall be inoperative with the engine warm. Complete provisions for a replaceable ether reservoir of not less than 355 milliliters (ml) (12 fluid ounces) shall be furnished. A reservoir need not be furnished. On diesel engines 6.6L and larger, the electric starter motor shall be equipped with a thermostat controlled, automatic resetting circuit breaker to protect the motor from over crank heat damage. Easily accessible remote jump - start posts (both positive and negative) shall be furnished, within close proximity to the battery box. Posts shall be furnished with protective rubber or plastic type covers that are tethered to prevent loss.

3.4.2.2 IGNITION SYSTEM.

For gasoline engine driven vehicles, a 12-volt dc ignition system shall be furnished.

3.4.2.3 ALTERNATOR.

Unless otherwise specified, a minimum 130-ampere alternator shall be provided. The alternator output with the engine at idle speed shall be not less than 70 amperes. When code A14 is specified, a minimum 145-ampere alternator shall be provided. The alternator output with the engine at idle speed shall be not less than 70 amperes.

3.4.2.4 LIGHTING.

All vehicle lights, reflectors, and wiring shall conform to Federal Motor Carrier Safety Regulations 393.19, 393.20 and 393.22 through 393.26(d). Type I chassis need not be furnished with rear identification lamps or clearance lamps and reflectors. Type IV dump truck rear lighting shall be positioned or guarded to prevent damage during dumping of the cargo. Positioning and guarding shall permit normal replacement of the bulbs and lenses. Lights and reflectors shall not be mounted on vertical surface of rub rails (unless recessed and fully protected) or mounted on vehicle bumpers. When right hand drive is specified by acquisition documents, left-dip headlights shall be provided. Left-dip headlights may be provided as a replacement set, stowed in the cab for shipment. Daytime running lights shall be furnished, in accordance with FMVSS 108, and TMC RP 138. Truck bodies shall be furnished with conspicuity markings in accordance with FMVSS 49 CFR Part 571.108. When code DRLD is specified, daytime running lights shall not be provided. When code LED is specified, all added stop/tail directional, and marker lights shall be light emitting diodes. LED lights shall be installed with tamper resistant hardware.

3.4.2.5 TURN SIGNALS.

Turn signal control shall be mounted on the steering column. Type II truck tractor turn signal units shall be visible when not in combination with a towed vehicle. Turn signals shall have visible flash indicators. Temporary mounting for rear signal units shall be provided on chassis models. Turn signals shall conform to TMC RP 118A.

3.4.2.6 LIGHTING CABLE FOR TYPE II TRUCK TRACTOR.

The semitrailer lighting cable for type II truck tractor shall conform to SAE J1067. The cable shall incorporate a connector conforming to SAE J560 on the semitrailer end. The cable shall be precoiled and shall have an extended length of not less than 110 inches. The SAE J560 connector shall include a grip for withdrawing from the semitrailer receptacle. Stowage for the cable shall be provided by the means of a hook and hanging loop or a protective holding bracket. When the hook and loop method is used, the cable shall be so attached as to ensure that the plug is pointed down when the cable is stowed. Unless otherwise specified, stowage shall be by:

(a) A hook provided on the rear of the truck tractor cab.

(b) A hook on a pogo-stick type hose tender.

(c) A protective bracket mounted at the rear of the cab below the roofline. Each shall hold the cable plug so as to prevent water from entering the terminals. The lighting cable; when on the hook, loop or protective bracket; shall be accessible to an operator standing on the ground to the rear of the cab, on the streetside of the vehicle.

3.4.2.7 BATTERIES.

Each battery shall be of 12-volt potential. The total reserve capacity ratings and the total cold cranking ampere ratings at -18°C (0°F), both measured in accordance with SAE J537, shall be not less than specified in Figure 5. The batteries shall be of the maintenance-free type having the maintenance-free characteristics listed in A-A-55439. Batteries shall conform to TMC RP 109A.

Figure 5 Batteries

RESERVE CAPACITY		COLD CRANKING
ENGINE TYPE	(MINUTES)	(AMPERES)
Diesel engine	540	1875
Gasoline engine	115	535

3.4.2.8 AUXILIARY 24-VOLT SYSTEM WITH TRAILER RECEPTACLE.

When code VOL is specified, an auxiliary 24-volt system, with a trailer receptacle assembly, shall be provided. Either a converter type (see 3.4.2.8.1) or an alternator type (see 3.4.2.8.2) system, meeting specified requirements, shall be provided. A trailer receptacle, conforming to MS 75021-2, with cover assembly, shall be provided in an accessible location on the rear end of the vehicle. A 12-conductor truck tractor cable, not less than 3048 mm (10 ft) long with both ends of cable equipped with connectors conforming to MS 75020-1 and MS 75020-2, shall be furnished. The cable assembly shall be stowed in the vehicle. The 24-volt, service lighting circuit shall be connected through the appropriate lighting controls to terminals B, D, E, J and L of MS 75021-2. On type II truck tractor, a pogo stick type hose tender shall be provided behind the cab to accommodate and secure the 24-volt cable.

3.4.2.8.1 CONVERTER TYPE 24-VOLT SYSTEM.

The 12- to 24-volt converter(s) shall operate from the 12-volt battery (see 3.4.2.7). The output capacity shall be not less than 24 amperes. More than one converter may be provided to furnish a total of 24 amperes.

3.4.2.8.2 ALTERNATOR TYPE 24-VOLT SYSTEM.

The alternator type 24-volt system shall be separate from the 12-volt vehicle lighting and ignition system and shall include:

(a) Nominal 24-volt alternator with not less than 25 amperes rated capacity and capable of providing not less than 7 amperes dc output at normal engine idle speed.

(b) Two 12-volt batteries with a combined capacity of at least 40 ampere-hours at a 20 hour rate or one 24-volt battery with at least 20 ampere-hours capacity at a 20 hour rate.

(c) Voltage regulating device.

(d) An ammeter for the 24-volt system, mounted on the instrument panel.

3.4.2.9 RADIO INTERFERENCE SUPPRESSION.

The vehicle shall be suppressed to limit electromagnetic radiation in accordance with SAE J551. Any body equipment emitting electromagnetic radiation shall be suppressed to the same level as the vehicle chassis.

3.4.3 FUEL SYSTEM.

The fuel system shall conform to Federal Motor Carrier Safety Regulations 393.65 and 393.67.

3.4.3.1 AIR CLEANER.

A dry type air cleaner shall be provided. When code ASI is specified, a resettable dash mounted service indicator or warning light, that registers the highest air restriction reading shall be furnished.

3.4.3.2 FUEL TANK(S).

Except as specified for type II truck tractor or unless otherwise specified for other vehicle types (see 6.2) in the tables or, fuel tanks shall be not less than 170 L (45 gallons) total capacity. Type II truck tractor shall be equipped with fuel tank(s) of not less than 378 L (100 gallons) total capacity. When more than one fuel tank is furnished on diesel engine driven vehicles, means shall be provided to assure equalized fuel level in both tanks. When more than one tank is furnished on gasoline engine

driven vehicles, a selector valve connecting either tank to engine fuel intake shall be provided and means shall be provided to monitor the fuel level of either tank from a single fuel gauge; or an equalizing pump shall be used to maintain the same fuel level in both tanks. When code FTC is specified, fuel tanks of not less than 265 L (70 gallons), shall be provided. When code FTD is specified, fuel tanks of not less than 380 L (100 gallons) shall be provided. When fuel crossover lines are furnished they shall be in accordance with TMC RP 321. When code FTE is specified, dual 378 L (100 gallons) minimum capacity tanks shall be provided. When code LPG is specified, an OEM liquefied petroleum gas (propane) engine shall be provided. When code CNG is specified, an OEM compressed natural gas engine shall be provided. Fuel capacity for either type engine shall provide for a minimum of 175 miles range without refueling.

3.4.3.3 FUEL AND WATER SEPARATOR.

The manufacturer's standard or optional fuel filter shall be provided. A fuel and water separator shall also be furnished for diesel engines. The separator shall include a water coalescer and a drain valve. A combination filter/separator unit may be provided. See 3.4.1.9.1 for heated fuel and water separator.

3.4.4 EXHAUST SYSTEM.

The exhaust system shall conform to Federal Motor Carrier Safety Regulation 393.83. When code VES is specified, a vertical exhaust pipe shall be provided. The vertical exhaust pipe shall be equipped with a heat shield and hinged rain cap. A vertical exhaust pipe is not available on gasoline driven vehicles. When code EPY is specified, an engine exhaust pyrometer with dash-mounted gauge shall be provided.

3.4.4.1 SPARK ARRESTER.

When code SKS is specified, a spark arrester shall be provided. The spark arrester shall have an 80 percent arresting efficiency when rated in accordance with SAE J350. Note: not available on vehicles with turbocharged engines.

3.4.5 TRANSMISSION.

Unless otherwise specified, the vehicle shall be equipped with an automatic transmission. When specified (see 6.2), the vehicle shall be equipped with a manual transmission, complete with clutch. The input torque capacity of the transmission shall be at least equal to the maximum torque delivered by the engine. The transmission and axle gear ratios shall be selected to provide the performance specified in 3.3.1 through 3.3.1.3.

3.4.5.1 AUTOMATIC TRANSMISSION.

The automatic transmission shall include a hydraulic torque converter and not less than four forward gear ratios. Normal driving range selector position shall provide not less than four gear ratios without movement of the selector. The transmission shall be provided with a power takeoff provision. The net torque capacity and the net power rating of the transmission shall exceed the output ratings of the engine. When code T53, T66, or T75 is specified, a minimum five speed automatic transmission shall be provided.

3.4.5.2 MANUAL TRANSMISSION.

When code T5 or T6 is specified, a five or six speed manual transmission, respectively, shall be provided. Class G vehicles shall have a minimum 9 speed transmission. Gear ratios in the transmission and axle shall be matched to provide a progressive shifting pattern throughout the complete range. The transmission shall be provided with SAE J704 power takeoff openings at the right and left sides. The transmission shall provide for maximum ease of shifting in all speeds.

3.4.5.2.1 CLUTCH.

The clutch shall be the largest capacity clutch offered for the type and class vehicle and engine furnished with the clutch torque capacity exceeding the maximum delivered engine torque. The clutch lining shall be asbestos free. The clutch shall be equipped with spring dampening and a greaseable bearing on YD6 engines and larger.

3.4.5.3 POWER TAKEOFF.

When code PTS is specified, an air or electric/hydraulic actuated power takeoff with constant mesh gears shall be provided. Controls to operate the power takeoff shall be located in the truck cab accessible to the seated driver. The PTO unit shall have a rated capacity to operate the provided equipment. When a PTO unit is provided on a vehicle, a caution plate or decal reading "Do not operate vehicle at highway speeds with PTO engaged" shall be installed in the cab, readily visible to the driver. Note: option not available on vehicles having a manual transmission.

3.4.5.4 TRANSFER CASE.

A two-speed transfer case shall be provided on 4x4 vehicles.

3.4.6 DRIVELINE COMPONENTS.

Driveline components shall be rated to transmit the maximum delivered torque of the engine, as developed through the maximum gear train reduction. The driveline shaft for front mounted winches shall have an angle not greater than 16 degrees from the longitudinal plane. Components shall be rated no less than the GCWR in 3.2.8. Drivelines shall be balanced and free of vibration.

3.4.7 FRAME.

The chassis frame shall be the manufacturer's standard for the type and class vehicle furnished. Reinforcements shall extend at least from the rear of the front suspension, rear hanger bracket to the front of the rear spring, front hanger bracket. Reinforcements for type III stake dump and type IV dump shall provide sufficient structural strength in the chassis frame, through increased resisting bending moment (RBM), to at least equal the loads imposed, with the dump truck loaded to provide specified GVW. Frame reinforcement for types III stake with crane shall be in accordance with the body manufacturer's

recommendations for the size of the crane furnished. Frame rails shall not project beyond the rear end of the body. Unless otherwise specified, on type II tractors, the chassis frame rails shall be cut off immediately to the rear of the rear spring rear hanger brackets or the frame crossmember closest to the rear of these brackets. When code FTR is specified, the frame rails shall extend and shall taper from maximum cutoff position so as to assist in coupling to a semitrailer. When a RBM is specified, any frame combination of yield strength and section modulus that provides the required RBM is acceptable. When code FHD is specified, a heavy-duty frame in accordance with the requirements of Figure 6 shall be provided. When code LH is specified, a low profile chassis shall be provided with minimum 19.5 tires and a maximum of 25 cm (35 in) to top of unloaded frame at centerline of rear axle. When code FFE is specified, an integral front frame extension, minimum 45 cm (18 in) ahead of grille shall be provided, with a radiator and hood compatible for the installation of a front crankshaft PTO to accommodate pumps, winches, or other equipment.

Figure 6 Heavy Duty Frame Requirements for Code FHD

CLASS	RBM MINIMUM IN LB
C	590,000
D	850,000
E	900,000
F	1,300,000
G	1,600,000

3.4.8 SUSPENSION.

Except as specified in 3.2.6.1 and 3.2.6.2, the vehicle shall be equipped with a suspension system with components having a rated capacity at least equal to the load imposed on each member, measured at the ground, with the vehicle loaded to specified GVW. When suspension is rated at the spring pads, unsprung weight shall be deducted. The vehicle shall be equipped with hydraulic, double-acting shock absorbers at the front wheels. When code AUXS is specified, auxiliary rear springs shall be provided.

3.4.8.1 REAR AIR SUSPENSION.

When code SAR is specified, an air suspension shall be provided on the rear axle for class E, F and G vehicles. The suspension system shall have not less than 55 percent of the sprung weight carried on the air springs. The air suspension system shall incorporate at least one track bar to control lateral movement. Each end of the track bar(s) and of the torque rod(s), if so equipped, shall be equipped with rubber bushings that do not require periodic lubrication. The suspension system shall incorporate leveling valve(s) with time delay or other devices to minimize constant air consumption. On type II truck tractors, the system shall be equipped with an air pressure dump valve. Controls shall be located in the cab, accessible to the seated driver. Hydraulic double-acting shock absorber(s) shall be provided near each of the air springs. The air suspension system shall include mechanisms to prevent damage from excessive extension when lifting and towing the vehicle. The suspension shall be provided with a mechanism at each wheel to assure lifting of the wheel and axle when jacking the vehicle from the applicable jacking location. Note: option not available on Type IV dump trucks.

3.4.9 AXLES.

Except as specified in 3.2.6.1 and 3.2.6.2, axle ratings shall be at least equal to the load imposed on each axle, measured at the ground, with the vehicle loaded to specified GVW. The wheel bearings and axle spindles shall be oil lubricated except on front drive axles. The hubcaps, except for driving axles, shall have a window for visual determination of oil level. Provisions for venting or withstanding internal pressure buildup and for replenishing the oil supply shall be provided.

3.4.9.1 TWO-SPEED AXLE.

When code RA2 is specified, a two-speed axle equipped with electric, vacuum, or air shift shall be provided. The gear ratios shall provide the performance specified in 3.3.1 through 3.3.1.3. Note: option not available on 4x4 vehicles or when code D1 is specified.

3.4.9.2 TRACTION CONTROL.

When code D3 is specified, the traction control shall actuate automatically to ensure that power is transmitted to the wheel having traction when the opposite wheel loses traction. Maximum traction capabilities shall be maintained at all times under each drive wheel(s) for the life of the vehicle. When code D1 is specified, a driver controlled differential lockout shall be provided. Traction control shall be provided on Type IV dump trucks and shall be either code D1 or D3. Note: Code D1 is not available when code RA2 is specified.

3.4.10 WHEELS, RIMS, TIRES AND TUBES.

Unless otherwise specified, the vehicle shall be equipped with single front and dual rear wheels. Rims and tire ratings shall conform to Tire and Rim Association or European Tyre and Rim Technical Organization recommendations for the type and size of tires furnished. Disc wheel sizes shall be the same for all wheels. Tire size and load range (ply rating) shall be the same for all tires except class F vehicles. When code HF is specified, wide base type tires and wheels for the front and rear axles shall be provided. Wide base wheels shall be interchangeable without the use of an adapter. The front track of wide base tires shall be within plus or minus 25 cm of the rear track. Unless otherwise specified disc type wheels shall be furnished. Hub piloted wheels shall be furnished. Tire and wheel assemblies shall be balanced.

3.4.10.1 TIRES.

Unless otherwise specified, standard profile steel belted radial ply tires shall be provided. Tires shall have highway tread on 4x2 vehicles and all terrain (AT) tires or on-off road

(OO) tires on 4x4 vehicles, and the rear axle of dump trucks. Tires shall be of the tubeless type. Except as specified in 3.2.6.1 and 3.2.6.2, tires shall be of rated capacity at least equal to the load imposed on each tire, measured at each wheel, at the ground, with the vehicle loaded to specified GVW. Tires shall conform to the Tire and Rim Association or to The European Tyre and Rim Technical Organization recommendations. When code SLP is specified, low profile tires shall be provided. When code MS is specified on 4x2 vehicles, mud and snow tread shall be provided on rear axles.

3.4.10.2 CARRIER FOR SPARE TIRE ASSEMBLY.

When code STC is specified, a carrier for a spare tire assembly shall be provided. The carrier design shall enable safe removal or mounting of a spare tire assembly using only the tools specified in 3.4.16.1. The carrier shall enable the safe removal and installation of the spare tire assembly from and to the vehicle and carrier without personnel positioning themselves or any part of their body under the spare tire assembly. Threaded fasteners, when used to secure the spare tire assembly in the carrier, shall be constructed of or plated with corrosion resistant material. The carrier shall be installed in a readily accessible location on the vehicle. On Type VII and Type VIII vehicles, the carrier shall be installed on the curbside, under the body, forward of the rear axle. When code VMS is specified, a vertical carrier for a spare tire assembly shall be provided. The carrier shall be mounted behind the cab above the chassis frame for type II tractors or type IV dump trucks. When code VMS is specified, for type III stake trucks, a vertical carrier for a spare tire assembly shall be provided. The carrier shall be mounted behind the cab on the front rack or bulkhead.

3.4.10.3 SPARE TIRE ASSEMBLY.

When code STA is specified, a spare tire assembly for the front axle shall be provided. The spare tire assembly shall be identical to those on the axle for which is intended. The spare tire assembly(ies) shall include an inflated spare tire(s) mounted on the spare wheel(s). If a Class F vehicle is furnished with a higher load range on the rear, the spare shall be the higher load range. When code STB is specified, a spare tire assembly for the rear axle shall be provided.

3.4.10.4 TIRE CHAIN CLEARANCE.

Tire chain clearance in accordance with SAE J683 shall be provided. Allowance for spring deflection shall be included.

3.4.10.5 AUTOMATIC TIRE CHAINS.

When code AICE is specified, the vehicle shall be equipped with automatic tire chains on the rear axle. Option available only on vehicles with air brakes. The chains shall be permanently mounted to the rear suspension. Controls to engage and disengage the chains shall be located in the cab, and be easily accessible to the seated driver. Activation of the chains shall be accomplished without stopping the vehicle, to enhance braking and traction in forward and reverse speeds. When activated the chains shall provide improved traction under tires on the rear axle. Installation of the chains shall be in accordance with the application requirements of the manufacturer of the automatic tire chains.

3.4.11 BRAKES.

Brakes shall conform to Federal Motor Carrier Safety Regulations 393.40 through 393.43 and 393.45 through 393.52. Brake linings shall be of non-asbestos material. Class C vehicles shall be equipped with power assisted, hydraulic or air-hydraulic, service brakes.

3.4.11.1 AIR BRAKES.

The class D, E, F and G vehicles shall be equipped with full-air brakes. The braking system, complete with all necessary components, shall include:

(a) Air compressor, unloader-head type, engine driven and engine lubricated, air or water cooled, and having a capacity of not less than 340 L/min (12 cubic feet per minute (cfm)).

(b) Air storage reservoir(s), each tank equipped with drain, and with safety and check valves between the compressor and the last reservoir tank

(c) Foot control, suspended or treadle type

(d) Air control valves

(e) Air pressure gauge, visible to the driver

(f) Low air pressure warning, visible and audible

(g) Service brake stop lamp switch

(h) Automatic moisture ejector on air storage reservoir

(i) Automatic slack adjusters on cam type brakes or internal self-adjusting brakes on wedge and disc type brakes on all axles

(j) Brake dust shields on rear

(k) Spring set parking brake

3.4.11.1.1 AIR DRYER.

A replaceable cartridge desiccant type air dryer shall be installed in the air brake system. The dryer shall have the capability of removing not less than 95 percent of the moisture in the air being dried. The dryer shall have a pre-cooler and a filter to screen out oil and solid contaminants. The dryer shall have an automatic self-cleaning cycle and a thermostatically controlled heater to prevent icing of the purge valve. Air dryer shall conform to TMC RP 637.

3.4.11.2 TRAILER BRAKE CONTROL SYSTEM.

In addition to the components specified in 3.4.11.1 and 3.4.11.1.1, a trailer brake control system shall be furnished for type II truck tractor and when a trailer towing package is required (see 3.1.1.8). The trailer brake control system shall include:

(a) Identification of emergency and service lines

(b) Coincident control of trailer brakes with prime mover foot control

(c) Independent hand control for trailer brakes

(d) Prime mover protection valve with dash control and automatic breakaway feature

(e) Trailer stoplight control operable with foot brake and with hand control for trailer brakes

(f) Two SAE J844 precoiled air hoses, not less than 2800 mm (110 inches) long when fully extended, with SAE J318 gladhand couplers on both ends of hoses (not required for type II truck tractor unless a trailer towing package is specified). The hoses shall be packaged and stowed in the vehicle tool compartment for shipment.

(g) Air connectors for trailer with SAE J318 gladhand couplers mounted at the rear of the vehicle, located to prevent interference with a trailer (not required for type II truck tractor unless trailer towing package is specified). Air connectors and gladhands on type IV dump trucks shall be located to prevent damage during dumping of the cargo.

(h) Two SAE J844 precoiled (or when specified (see 6.2), not precoiled) connecting air hoses, not less than 2800 mm (110 inches) in length when fully extended, equipped with coiled spring hose guards, and SAE J318 gladhand quick connector on trailer end of hoses (type II truck tractor only).

(i) Unless otherwise specified, supports on the cab or on a pogo stick type hose tender with dummy gladhand connectors to retain hoses when not in use (type II truck tractor only). Supports shall not be mounted on the cab roof. The dummy glad-hand couplers shall be located on the streamside rear of the cab and shall be accessible to an operator standing on the ground. Supports shall conform to TMC RP 417.

(j) Dummy glad-hand couplers with security chains or cables (not required for type II truck tractor unless a trailer towing package is specified).

(k) Prime mover only parking brake valve to permit mover parking brakes to be applied while charging the trailer air brake system.

3.4.11.3 BRAKE CONTROLS FOR USE FROM A TOWING VEHICLE.

When code TBT is specified, the vehicle shall be provided with a system for controlling the brakes from a towing vehicle (wrecker). The installation shall be complete with air brake couplers, relay emergency valve with no-bleed-back feature (except when spring applied emergency brake is furnished), additional air lines and fittings. The service and emergency couplers shall be mounted on the front in a protected position providing for ready attachment of air hoses from a towing vehicle. The service and emergency couplers shall be identified and provided with dummy glad-hand couplers with chains. The system shall not compromise conformance to any Federal Motor Carrier Safety Regulation referenced herein or to any Federal Motor Vehicle Safety Standard.

3.4.11.4 INCREASED BRAKING CAPABILITY.

When specified for class E, F or G vehicles (see 6.2), the service brakes shall be augmented by one of the following braking systems:

(a) An electromagnetic or hydrodynamic drive shaft retarded, code EDR

(b) A system which opens all or some of the engine exhaust valves near the end of the compression stroke, thereby converting vehicle motion to a pumping loss, code ECB

(c) A controlled gate valve in the exhaust manifold, which produces backpressure on the engine pistons during the exhaust stroke, code EXB

(d) When an automatic or semiautomatic transmission is specified, a hydrodynamic retarded integral with the transmission, code T1

A dash mounted switch shall be provided to activate, modulate, or cut the brake augmentation. The switch shall be marked to indicate its position. When active, the system shall be fully controlled by means of the conventional driving controls to apply retardation during vehicle deceleration, and to cut it out in the other operating modes. For (b) or (c), above, the retarded shall be approved by the engine manufacturer.

3.4.11.5 ANTILOCK BRAKE SYSTEM.

Vehicles equipped with air brakes shall be provided with an antilock brake system in accordance with FMVSS 571.121. Vehicles equipped with hydraulic brakes, shall be provided with an antilock brake system in accordance with FMVSS 571.105. Type II Truck Tractors shall have the SAE J560 seven-pin connector wired to conform to TMC RP 137.

3.4.12 CAB.

Unless otherwise specified, an OEM conventional type full width cab shall be provided. Unless otherwise specified, a cab with a forward tilting hood and fender assembly, including tilting and locking mechanism, shall be provided. Tilting shall not interfere with installed equipment. When code COE is specified, a cab-over-engine (tilt cab) shall be provided. Both cab doors shall be equipped with locks, operable from inside the cab through mechanical linkages and equipped with external, key operated locks. Drip protection shall be provided above the cab doors. Safety grips or grab handles shall be provided on each side of the cab to assist personnel in entering and leaving the cab and, in addition, for type II truck tractor, to assist personnel in climbing onto the truck tractor deck plate. When step height into the cab exceeds 610 mm (24 inches) a secondary step shall be provided, in accordance with TMC RP 404 B. When the front tires extend beyond the cab fenders, rubber fender extensions extending at least to the outside of the tire tread shall be furnished. For tilt type cabs, provisions to facilitate cleaning the windshield shall be provided by means of a bumper step, or bumper step cutouts, and a grab handle located under the windshield. When a snowplow or snowplow provisions are specified, service hatches or access or butterfly type hood shall be furnished to provide access for routine engine maintenance with a snowplow attached. Cab equipment shall include: a 12-volt electrical power point outlet (receptacle), easily accessible to the seated driver; and tinted glass in all windows, where optionally available from the chassis manufacturer.

3.4.12.1 CAB INTERIOR.

Unless otherwise specified, the cab shall have an upholstered, full width, adjustable seat and back or individual, adjustable, driver's seat and individual passenger seat. When code DSS is specified, an individual, adjustable, driver's suspension seat and an individual passenger seat shall be provided. The driver's suspension seat shall be the manufacturer's standard mechanical type on class C and air ride suspension type on class D, E and F. When code DSS2 is specified, the driver seat and the passenger seat shall conform to the requirements of code DSS. The color of the upholstery and the interior finish shall be compatible with the exterior color (see 3.1.1.1). White upholstery shall not be furnished. Interior lighting shall be provided. Three sets of seat belts shall be installed on bench seats. Outboard seats shall have combination pelvic and upper torso restraint seat belts. A rear cab window shall be furnished, unless a sleeper compartment is specified.

3.4.12.2 CREW CAB.

When code CC is specified, a four-door, full width crew cab shall be provided. The cab shall be equipped with two upholstered, full width seats and backs. The front seat shall be adjustable. Three pairs of seat belts shall be installed for both the front and rear seats. Front outboard seats shall have combination pelvic and upper torso restraint seat belts. Cab doors shall be equipped with locks operable from inside the cab through mechanical linkages, with both front doors equipped with an external key operated lock. Cab doors shall have windows with crank operated window regulators. A rear window shall be provided. Interior lighting shall be provided. Safety grips or grab handles shall be provided at each door of the cab to assist personnel climbing into the cab. The cab roof shall be of one-piece construction; or, if welded, the roof shall give the appearance of one piece, with weld seams being continuous, waterproof, and free of visible bumps or protrusions. Full-length drip moldings shall be mounted above the doors.

3.4.12.3 CREW CAB SEAT SPACING.

With the front seat adjusted to the extreme forward position there shall be not less that 760 mm (30 inches), measured in a horizontal plane, between the front of the rear seat-back and the rear of the front seat-back. A kick-space height of not less than 70 mm (2.75 inches) shall be maintained between the floor and the rear of the front seat in all positions of adjustment. Legroom and space forward of the front seat shall be equivalent to that provided ahead of the seat in a two-door standard cab.

3.4.12.4 SLEEPER CAB.

When code SLP1 is specified, a sleeper cab meeting the requirements of 3.4.12 and 3.4.12.1 shall be provided with the following additional space, equipment and features: The sleeper compartment shall be not less than 914 mm (36 inches) in depth and fitted with a foam or inner spring mattress not less than 863 mm (34 inches) in depth, and a sleeper occupant restraint system. A luggage compartment with locking access doors on each side of the cab shall be provided. Curtains and a dome light shall be provided. The sleeper compartment shall have heating and air conditioning. Auxiliary air temperature controls or louvers shall be provided in the sleeper compartment. The controls or louvers shall provide for remote regulation of both heating and air conditioning from within the sleeper compartment.

3.4.13 STEERING.

Power steering shall be furnished.

3.4.14 WINDSHIELD WIPERS AND WASHERS.

The vehicle shall be equipped with dual windshield wipers and windshield washers. Windshield wipers shall be of the multispeed type and operated by either air or electric motor(s). When code WN is specified, and if electric motor wipers are furnished, intermittent wipers shall be provided.

3.4.15 BUMPER.

Unless the bumper is an integral part of vehicle cab, a channel type front bumper shall be provided on each vehicle.

3.4.15.1 REAR END PROTECTION.

Except for type I chassis, type II truck tractor, and type IV dump, the rear end of the vehicle shall be protected in accordance with Federal Motor Carried Safety Regulation 393.86. A rear bumper shall be provided as specified herein for the various vehicle types.

3.4.16 TOOL STOWAGE.

Stowage space of sufficient size to accommodate a vehicle jack, hand tools, anti-skid chains (for outside tires on duals only) and emergency reflective triangles shall be provided. The stowage space shall provide for positive retention of this equipment during vehicle operation. Stowage space for these tools may be furnished in the cab. When stowage space for these tools is located outside the cab, it shall be weatherproof and shall provide for locking with a padlock or integral lock.

3.4.16.1 TOOLS.

When code TJ is specified, tools for changing a mounted tire assembly with the spare assembly shall be provided. Tools shall include at least a hydraulic jack, jack handle and wheel nut wrench. The jack shall be of such closed height as to permit its location under an axle, or other satisfactory lift point at any wheel with the tire flat. The jack, without blocking, shall be capable of raising any wheel of the loaded vehicle to a height adequate to permit removal and replacement of a wheel and tire assembly.

3.4.17 HEATER AND DEFROSTER.

The vehicle shall be provided with a hot water heater with fresh air intakes and discharge outlets to the floor and to windshield defroster louvers. The heater shall be complete with blower and mounted controls convenient to the driver.

3.4.18 CONTROLS AND OPERATING MECHANISMS.

All controls and operating mechanisms shall be located for left hand drive. Controls shall be complete and conveniently operable by the driver. Lever controls shall be designed and

located to permit easy entrance and exit of the operator to and from the driver's compartment. Instruments and controls shall be identified as to their function and installed in a manner to facilitate removal and servicing. All instruments shall be visible to the driver when seated in the driving position.

3.4.19 ACCESSORIES AND EQUIPMENT.

Chassis equipment shall be complete with all accessories furnished as standard equipment by the manufacturer. The following minimum equipment shall be furnished:

(a) Key operated ignition switch

(b) Ammeter or voltmeter

(c) Fuel gauge

(d) Oil pressure gauge

(e) Engine coolant temperature gauge

(f) High coolant temperature or low coolant level and low oil pressure alarm buzzer

(g) Speedometer with recording odometer

(h) Dual sun visors

(i) Driver's compartment ventilator other than window

(j) Tachometer (for diesel engine driven vehicles)

(k) Front door or seat mounted armrest on driver and on passenger side

(l) When a diesel is required, an engine shutdown system shall be provided in lieu of the alarm buzzers specified, in (f) above. The engine shutdown system shall include an engine coolant temperature, engine coolant level and engine oil pressure red indicator warning light and alarm buzzer. The warning light and buzzer actuation shall precede engine shutdown. The system shall permit engine restart and run for approximately 30 seconds following automatic shutdown.

(m) When code SK is specified, the odometer shall show cumulative distance in kilometers.

(n) When code AAG is specified, an air application gauge, displaying applied braking air pressure, shall be provided.

3.4.20 REARVIEW MIRRORS.

Outside rearview mirrors shall be mounted on both sides of the cab. The mirrors shall have flat and convex areas. The flat portion shall have not less that 320 square centimeters (50 square inches) of reflective area. The convex portion shall have not less than 155 square centimeters (24 square inches) of reflective area. The convex portion shall be attached to the lower mirror-supporting arm and shall not interfere with use of the flat mirror. When code RM3 is specified, the curbside flat mirror shall be of the motorized type, with remote control. The mirror motor shall provide not less than 60 degrees horizontal rotational viewing range. Code RM3 shall include the requirements of code RM4. When code RM4 is specified, the flat mirrors shall be electrically heated. Mirror remote and heating controls shall be within reach of the seated driver.

3.4.21 HORN.

The manufacturer's standard electric horn shall be furnished. In addition, on class D, E, F and G, an air operated horn shall be provided.

3.4.22 ENGINE HOUR METER.

When code EHM is specified, an engine hour meter shall be provided. The meter shall have a totalizing mechanism of not less than 9,999 hours for the chassis engine to register accurately the number of hours of operating time. The meter shall be of rugged construction to ensure continuous trouble-free performance under severe operating conditions. The meter shall be mounted on the cab instrument panel or in the engine compartment in a readable location.

3.4.23 BACK-UP ALARM.

When code BUA is specified, an alarm shall be provided which provides an audible warning whenever the ignition switch is "on" and the vehicle transmission control is in reverse. The alarm shall automatically adjust to ambient noise levels. Alarm shall conform to SAE J994. Note: Code BUA is required for a Type IV dump truck.

3.4.24 AM/FM RADIO.

An OEM AM/FM radio with clock shall be provided. When code RACS is specified, an OEM AM/FM/clock radio with integrated cassette player shall be provided.

3.4.25 AIR CONDITIONING.

The vehicle shall be equipped with the chassis manufacturer's standard all weather air conditioner. The use of a Class I or Class II controlled substance refrigerant is prohibited. Air conditioning system shall conform to TMC RP 418. When code DA is specified, the vehicle supplier shall furnish the vehicle without air conditioning components.

3.4.26 SERVICING AND ADJUSTING.

Prior to acceptance of the vehicle by the Government inspector, the contractor shall service and adjust each vehicle and its mounted equipment for operational use including at least the following: alignment of lights, adjustment of the engine and brake systems; filling and charging of batteries; alignment of front wheels; inflation of all tires; complete lubrication of chassis, engine and running gear with grades of lubricants recommended for the ambient air temperature at the delivery point; servicing of the cooling system in accordance with 3.4.26.1; and servicing of the windshield washer reservoir with water and appropriate additives.

3.4.26.1 ENGINE COOLANT.

The engine coolant shall be a solution of chassis manufacturers ethylene glycol antifreeze and water or propylene glycol antifreeze and water, in equal parts of antifreeze and water by

volume (-34°C (-30°F protection). When code H4 is specified, the percentage of antifreeze in the cooling system shall be increased to provide protection against freezing down to -47°C (-63°F).

3.4.27 FRONT MOUNTED WINCH.

When code MHW is specified, a winch assembly mounted on the front of the vehicle shall be provided. The winch shall be powered by the manufacturer's standard power takeoff or powered hydraulically. The winch shall conform to SAE J706. The winch shall be of the single drum type and shall have one forward and one reverse speed. All winch controls shall be mounted inside the cab. Winch controls shall be located to provide no interference with the entrance or exit of the driver. The winch shall have a rated single line pull capacity of not less than 89 kn. (20,000 pounds) pull on the bare drum. The winch line speed on the bare drum shall be between 4.6 and 9.1 meters/min (15 and 30 feet per minute) at an engine speed equal to 35 percent at engine-governed speed. The winch shall be wound with not less than 56 m (185 feet) of 16 mm (0.625 inch) diameter, preformed, 6x37, improved plow steel, independent wire rope core (IWRC) and shall be equipped with end chain and hook. An integral, adjustable, automatic safety brake shall be provided. The winch shall be equipped with a roller guide. Angles of the winch driveline U-joints shall be not greater than 16.5 degrees.

3.4.27.1 WINCH DRUM GUARD.

A winch drum guard shall be furnished. The guard shall confine the cable to the area between the drum flanges. The guard shall consist of not less than 6.4 mm (0.25 inch) vertical side plates, conforming to the outside radius of the drum flanges. Six bars, 9.5 mm by 32 mm (0.375 inch by 1.25 inches), shall be welded to the vertical side plates. Three bars shall be located on the top and spaced equally on the top radius, and three bars shall be located on the bottom and spaced equally on the bottom radius. The vertical distance between the vertical side plates and the drum flanges shall be not more than half the specified cable diameter.

3.4.27.2 FRONT BUMPER.

When a front mounted winch is specified, the bumper shall be mounted forward of the winch. The open area on either side of the winch shall be covered with a combination step plate and gravel guard. The bumper shall be either a channel (see 3.4.15) or a pipe type front bumper. When a pipe type front bumper is furnished, the nominal diameter shall be not less than 75 mm (three inches), and the wall thickness shall be not less than that specified in schedule 40 of ASTM A53. The pipe type front bumper shall have half-round ball ends.

3.4.27.3 COMBINATION STEP PLATE AND GRAVEL GUARD.

When a front mounted winch is specified, a combination step plate and gravel guard shall be furnished. The step plate shall be fabricated of not less than 14 gauge (1.897 mm) (0.0747 inch) steel tread plate exclusive of projections. The step plate shall be secured to the front bumper and shall be not less than 6.4 mm (0.25 inch) or not greater than 9.5 mm (0.375 inch) from the chassis sheet metal. The step plate shall be capable of supporting 1460 kg/m2 (300 pounds per square foot). The step plate shall not deflect more than 3.2 mm (0.125 inch) under the loads imposed.

3.4.28 EMERGENCY EQUIPMENT.

When code FEX is specified, emergency equipment in accordance with FMCSR 393.95 shall be provided. Equipment shall consist of 393.95: (a)(2)(i) fire extinguisher, min 10 B:C; (c) spare fuses for nonreset type devices; and (f)(z)(i) reflective triangles, in accordance with TMC RP 403.

3.4.29 PLACARD HOLDERS.

When code FPH is specified, hazardous material placard holders in accordance with 40 CFR Part 172 shall be installed on each side and each end of the vehicle.

3.4.30 EXHIBIT OR DISPLAY TRUCK TRACTOR PACKAGE.

When authorized by agency or departmental procurement documents and when specified (see 6.2), type II truck tractor shall be furnished with an exhibit or display package. The package shall include a chrome plated or stainless steel exhaust shield and tail pipe, polished aluminum wheels, polished aluminum or polished stainless steel fuel tanks and fuel tank straps, polished aluminum, polished stainless steel or chrome front bumper and polished aluminum or polished stainless steel quarter fenders.

3.4.31 SYNTHETIC LUBRICANTS.

When code LSD is specified, differentials shall be provided with synthetic lubricants. When code LST is specified, manual transmissions shall be provided with synthetic lubricants. Synthetic lubricants shall conform to TMC RP 624.

3.5 VEHICLE TYPES.

The cab-to-axle dimension specified for the various vehicle types may be reduced by not more than 50 mm (two inches) when the vehicle is furnished with tilt type cab (see 3.4.12).

3.5.1 TYPE I (CHASSIS, WITH CAB).

Type I vehicles shall have one of the usable cab-to-axle (CA) dimensions shown in Figure 7 table I, as specified (see 6.2). Usable cab-to-axle is defined as the distance from the most rearward vehicle obstruction that would interfere with body mounting to the centerline of the axle. Load area for the purpose of determining weight distribution (see 3.2.6) shall be as specified (see 6.2). Chassis shall be suitable for subsequent mounting of the make, model and type of body and equipment specified if specified (see 6.2). Required CA dimensions must be specified when vehicle order is submitted.

Figure 7 Cab-axle (CA)		
CODE	LENGTHS (for fixed body)(select one)	MAXIMUM BODY SIZE
CA1	260/270 cm (101/108 in)	4.3 m/14 ft
CA2	300/320 cm (119/124 in.)	4.9 m/16 ft
CA3	340/360 cm (136/138 in)	5.5 m/18 ft
CA4	380/400 cm (150/156 in)	6 m/20 ft
CA5	420/440 cm (167/171 in)	6.6 m/22 ft
CA6	150/160 cm (59/60 in)	2.5 m/8 ft
CA7	180/190 cm (71/72 in)	3.0 m/10 ft
CA8	210/220 cm (83/84 in)	3.6 m/12 ft
Specify as needed when other than types covered by Figure 7.		

3.5.2 TYPE II (TRUCK TRACTOR).

When a hydraulic lift fifth wheel is specified, type II truck tractor shall conform to 3.5.2.9 through 3.5.2.9.3. When an air operated lift fifth wheel is specified, type II vehicle shall conform to 3.5.2.10 through 3.5.2.10.4. Otherwise, type II truck tractor shall conform to 3.5.2.1 through 3.5.2.6 with the fifth wheel on 4x2 vehicles mounted on an adjustable sliding base with manual release or air release unless an air release is specified. Type II truck tractor shall have an effective cab-to-axle (CA) dimensions not greater than that specified in table II for vehicles furnished with corresponding equipment. Unless otherwise specified, type II truck tractor shall be equipped with a fore and aft rocking, 910 mm (36 inch) diameter fifth wheel with forks and semiautomatic lock for SAE J700 kingpin. When code OSW is specified by a Military agency, a type II truck tractor shall be equipped with a full oscillating, 910 mm (36 inch) diameter fifth wheel with forks and semiautomatic lock for SAE J700 kingpin and shall be provided with lockout for locking out side oscillation. The fifth wheel shall be capable of being uncoupled by the operator standing on the driver's side of the vehicle. Uncoupling action shall be protected by a secondary manual lock, preventing movement of the uncoupling lever until the secondary lock is manually released. The fifth wheel shall have a visual indicator or latching mechanism to ensure a positive lock of the kingpin. The vertical load capacity and the drawbar pull capacity of the fifth wheel shall be not less than the loads imposed with the vehicle loaded to the required GVW and GCW.

3.5.2.1 FIFTH WHEEL LOCATION.

The clearance from the centerline of the kingpin to the cab, or to the vertical spare tire assembly when furnished, or pogo stick type hose tender when furnished, shall be not less than 1620 mm (64 inches). When additional equipment to be mounted behind the cab is specified, the 1620 mm (64 inches) shall be measured to the rearmost point of a pogo stick to be mounted behind the additional equipment. The CA may be increased. The centerline of the fifth wheel for class F tractors shall be not less the 360 mm (14 inches) forward of the rear axle centerline.

3.5.2.2 FIFTH WHEEL MOUNTING.

Fifth wheel mounting shall conform to Federal Motor Carrier Safety Regulation 393.70(b).

3.5.2.3 FIFTH WHEEL HEIGHT.

The unladen level height of the fifth wheel shall be 1219 mm (48 inches), plus or minus 25 mm (1 inch), above ground level for a fore and aft rocking fifth wheel, 1400 mm (55 inches), plus or minus 25 mm (1 inch), for a full oscillating fifth wheel on 4x2, and 1520 mm (60 inches), plus or minus 25 mm (1 inch) for a full oscillating fifth wheel on 4x4.

3.5.2.4 APPROACH RAMPS.

When a full oscillating fifth wheel is provided, approach ramps of plates shall be furnished to give support for fifth wheel forks and a continuous incline for semitrailer approach. The ramps or plates shall extend from the rear of the chassis frame to the fifth wheel forks. The forward (highest) edges of the approach ramps shall be rounded and smooth.

3.5.2.5 DECK PLATE.

A self-cleaning grating of sufficient structural strength for use by the operator in connecting air and electric lines between the tractor and a semitrailer shall be installed. The grating shall extend across and shall be bolted or clamped to the frame rails. Provisions to allow access to personnel climbing onto the deck plate shall be furnished. The grating shall be located as close to the cab as possible and shall extend not less than 380 mm (15 inches) toward the rear of the vehicle. When a back-of-cab mounted winch is furnished, the deck plate shall extend further rearward to provide a platform for the winch operator. Access through the grating for maintenance of fittings and other equipment shall be furnished. The deck plate shall be free of ragged or sharp exposed edges.

3.5.2.6 HOSE TENDER.

When a tilt cab is furnished, a pogo stick type hose tender shall be provided behind the cab to accommodate and secure the semitrailer lighting cable and air hoses. A pogo stick shall be provided on all types of cabs and mounted rearward when a rear mounted spare carrier or a rear-mounted winch is furnished. When a conventional cab is furnished without a rear mounted spare carrier and without a rear mounted winch, a cab mounted tender as specified in 3.4.2.6 may be provided in lieu of a pogo stick. Hose tender shall conform to TMC RP 417.

3.5.2.7 SLIDING FIFTH WHEEL (AIR RELEASE).

When code ARW is specified, the fifth wheel shall be mounted on an adjustable sliding base. The slide locks shall be of the air release type with controls mounted on the instrument panel. The fifth wheel shall have an adjustment range of not less than 580 mm (23 inches) with adjustment increments of not more than 100 mm (4 inches). The fifth wheel shall conform to 3.5.2 through 3.5.2.6 and all options therein specified in procurement documents. All clearance requirements specified in 3.5.2.1 shall be met with the sliding fifth wheel in its most forward position of

adjustment. With the sliding fifth wheel in its most forward position of adjustment, the centerline of the kingpin shall not be less than 380 mm (15 inches) forward of the centerline of the axle. There shall be no sliding positions to the rear of the axle. For safety, the actuating button in the cab shall be interlocked with trailer parking brake. Code ARW is not available with code OSW.

3.5.2.8 TRUCK TRACTOR WIND DEFLECTOR.

When code TWD is specified, a wind deflector shall be installed or shall be furnished with the vehicle for subsequent installation on the cab roof by the receiving activity. The deflector shall be of molded fiberglass reinforced plastic; shall be not less than 1600 mm (63 inches) wide; and, unless otherwise specified (see 6.2), shall be of a height suitable for use with the vehicle cab furnished in combination with semitrailer vans having a level height of 3810 mm (12 feet 6 inches) at an upper fifth wheel height of 1250 mm (49 inches). Mounting and support ribs and any other components that require manufacturer installation from the inside of the cab shall be installed by the cab manufacturer. Installation openings shall be sealed to prevent air and water from entering the cab. The deflector, including exterior mounting and supporting hardware, support ribs and the installation instructions, shall be securely stowed on the vehicle for shipment.

3.5.2.9 HYDRAULIC LIFT FIFTH WHEEL.

When specified (see 6.2), type II truck tractor shall be equipped with a hydraulic lift fifth wheel. The vehicle shall conform to the following requirements in lieu of all requirements specified in 3.5.2 through 3.5.2.4. The cab-to-axle dimension shall be in accordance with table VIII. The hydraulic fifth wheel shall be designed, warranted and marketed for highway use. The fifth wheel shall be self-contained, of all-steel, with a capacity to lift and support a load of not less than 22 700 kg (50,000 pounds) over a lifting range of at least 300 mm (12 inches) from the lowest to the highest position. Actuation through the full lifting range shall not cause the centerline of the fifth wheel to shift more than 180 mm (7 inches) measured along the longitudinal centerline of the vehicle. The fifth wheel shall be of the bolt-on type. The fifth wheel unit shall include a hydraulic system to actuate an elevating platform equipped with the fifth wheel; shall incorporate a pneumatic system to open a semiautomatic lock for an SAE J700 kingpin; shall include remote controls to permit all operations from within the vehicle cab; and shall include all necessary components, such as pump, hose and fittings. A manual locking device shall be furnished to lock out lifting capability. A decal or plate conforming to 3.1.1.13 reading "Lock down fifth wheel for highway use" shall be provided.

3.5.2.9.1 HYDRAULIC LIFT FIFTH WHEEL TYPE.

The hydraulic lift fifth wheel shall be of the fore and aft rocking type with a 910 mm (36 inch) diameter steel coupler plate supplied with beveled approach forks. The fifth wheel mounting shall conform to Federal Motor Carrier Safety Regulation 393.70(b).

3.5.2.9.2 HYDRAULIC LIFT FIFTH WHEEL CLEARANCES, HEIGHT AND LOCATION.

The clearance from the centerline of the kingpin to the cab or vertical spare tire assembly, when furnished, or pogo stick type hose tender, with the fifth wheel at all elevated positions, shall be not less than 1520 mm (60 inches). The landing wheel clearance from the centerline of the kingpin to the rear tires and chassis frame rails, with the fifth wheel in its lowest position, shall be not more than 1520 mm (60 inches). The unlined level height from the ground to the top of the coupler plate of the installed fifth wheel unit with the unit in its lowest position shall be 1370 mm (54 inches), plus or minus 25 mm (1 inch). With the fifth wheel in its lowest position, the vertical centerline of the fifth wheel shall be not less than 200 mm (8 inches) forward of the centerline of the rear axle.

3.5.2.9.3 DECK PLATE AND HOSE TENDER FOR HYDRAULIC LIFT FIFTH WHEEL.

A deck plate shall be furnished as specified in 3.5.2.5, and a hose tender or pogo stick type hose tender shall be furnished as specified in 3.5.2.6.

3.5.2.10 AIR LIFT FIFTH WHEEL.

When specified (see 6.2), type II truck tractor shall be equipped with an air lift fifth wheel. The vehicle shall conform to the following requirements in lieu of all requirements specified in 3.5.2 through 3.5.2.4. The cab-to-axle dimension shall be in accordance marketed for highway use. The fifth wheel shall be of all steel, with a capacity to lift and support a load of not less than 18,150 kg (40,000 pounds) over a lifting range of not less than 280 mm (11 inches), from the lowest to the highest position. Actuation through the full lifting range shall not cause the center of the kingpin lock to shift more than 75 mm (3 inches) measured along the longitudinal centerline of the vehicle. The fifth wheel unit shall be of the bolt on type. A manual locking device shall be furnished to lock out lifting capability. A decal or plate conforming to 3.1.1.13 reading "Lock down fifth wheel for highway use" shall be provided.

3.5.2.10.1 AIR LIFT FIFTH WHEEL COMPONENTS.

The air lift fifth wheel shall include the following:

(a) Additional air reservoir tank(s), not less than 210 L (7.4 cubic feet) total capacity, equipped with drain, safety and check valves between compressor and tank

(b) Automatic moisture ejection valve

(c) Two air starter valves to emit and expel air from the reservoir tank to the air bellows

(d) Three-way valve, for raising, lowering, or holding the fifth wheel in all desired positions. The valve shall be mounted on the truck tractor instrument panel in a location accessible to the seated driver driving.

(e) Snubbers to eliminate spring deflection

(f) Pneumatic system to open and lock the SAE J700 kingpin, operable from the truck tractor instrument panel.

3.5.2.10.2 AIR LIFT FIFTH WHEEL TYPE.

The air lift fifth wheel shall be of the fore and aft rocking type, with a 910 mm (36 inch) diameter cast steel coupler plate with beveled approach forks. The fifth wheel mounting shall conform to Federal Motor Carrier Safety Regulation 393.70(b).

3.5.2.10.3 AIR LIFT FIFTH WHEEL CLEARANCES, HEIGHT AND LOCATION.

The air lift fifth wheel clearance, measured from the centerline of the kingpin to the cab or pogo stick, shall be not less than 1620 mm (64 inches). The landing wheel clearance to the vertical plane at the outside edge of the rearmost tire and the chassis frame rail, with the fifth wheel in its lowest position, shall be not more than 1620 mm (64 inches) for classes A, B and C vehicles, and also not less than 1400 mm (55 inches) for class C truck tractor. The unlined level height from ground level to the top of the fifth wheel plate shall be 1370 mm (54 inches) plus or minus 25 mm (1 inch). With the fifth wheel in its lowest position, the vertical centerline of the fifth wheel shall be not less than 200 mm (8 inches) forward of the centerline of the rear axle.

3.5.2.10.4 DECK PLATE AND HOSE TENDER FOR AIR LIFT FIFTH WHEEL.

A deck plate shall be furnished as specified in 3.5.2.5, and a hose tender shall be furnished as specified in 3.5.2.6.

3.5.2.11 CAB PROTECTION RACK.

When code CPR is specified, a cab protection rack shall be provided. The cab protector rack shall be mounted behind the cab, and shall be full width and height of the cab, or sleeper compartment, if applicable. The cab protector rack shall permit driver visibility of the vehicle rear frame area through the rear window; when a rear window is furnished. The cab protector rack shall conform to Federal Motor Carrier Safety Regulation 393.106. When code CPR1 is specified, a cab protection rack meeting the requirements for code CPR and furnished with a locking chain rack, and full width locking tool tray (minimum 10 inches high and 8 inches deep) shall be provided. When code AUXL is specified, two auxiliary lights shall be provided. Lights shall be mounted at the top corners of the protection rack and shall not protrude above the rack. Wiring shall be protected. The switch to operate the lights shall be located in the cab and shall be easily accessible to the seated driver. The lights shall be PAR 36 sealed beams Number 4411-1, 35 watts and shall be mounted in waterproof, adjustable, rubber automotive housings. Lights shall be capable of illuminating the entire frame to the rear of the cab protection rack.

3.5.3 TYPE III (STAKE).

Type III stake trucks shall have body dimensions specified in table III. Rear bumper shall be furnished. When code BSR is specified, the center racks on both sides shall be the manufacturer's standard swing type, for easy side loading. Stake racks and platform body shall be painted black.

3.5.3.1 STAKE BODY.

The body shall consist of a steel frame platform, wood floor, and side and end racks. When a hydraulic crane is furnished (see 3.5.3.8), the body shall be mounted to provide a space back of cab-to-body of not less than 810 mm (32 inches) for mounting the crane.

3.5.3.2 STAKE BODY FRAME.

Body framing shall be completely welded structure with members of minimum gauge thickness specified in Figure 8 for carbon steel; high tensile steel may be furnished in two gauges lighter weight in accordance with US Standard gauge sizes. Crossmembers shall have no more than 40 cm (16 inch) center spacing, including ends and stub crossmembers as required for proper spacing over axle. Crossmembers shall be of full channel construction, or equal, with a minimum RBM of 55,000 in. - pounds reinforced by gusset plates or brackets at points of attachment to longitudinal sills, and contact edges of welded reinforcements shall be welded for not less than 50 percent of the edge length. Longitudinal sills shall be constructed of structural steel channels or formed channels. Formed channel sills shall be reinforced within the sill, at each crossmember or body mounting point, with formed channel reinforcements.

Wiring harness across the rear apron shall be enclosed in conduit or polyethylene loom except at terminal ends and shall be secured by rubber insulated metal cable clamps to the under body structure on not more than 12 inch centers.

Figure 8 Framing Gauges for Stake Bodies

CLASS	FRAMING MEMBER	US STANDARD GAUGE NO.	EQUIVALENT MILLIMETER	EQUIVALENT INCHES
-	Crossmembers	10	3.416	0.1345
D, E, F, G	Side and end rails	10	3.416	0.1345
C		12	2.657	0.1046
D, E, F, G	Longitudinal sills	8	4.176	0.1644
C		10	3.416	0.1345
D, E, F, G	Reinforcements	8	4.176	0.1644
C		10	3.416	0.1345
-	Rack posts	12	2.657	0.1046

3.5.3.3 STAKE BODY FLOORING.

The platform shall be floored with wood. Wood parts shall be treated in accordance with 3.1.1.5.

3.5.3.4 STAKE BODY WOOD FLOORS.

Wood floors shall be apitong, hardwood or pressure treated dense southern yellow pine not less than 29 mm (1-1/8 in) for class C and

33 mm (1-5/16 in) thick (finished dimension) for class D, E, F and G. Plywood type floors shall not be acceptable. Wood floors shall "run" longitudinally with either shiplap or tongue-and-groove joints. When code BDF3 is specified, apitong wood floors shall be provided.

3.5.3.5 STAKE BODY STEEL FLOORS.

Steel floors shall be 3.2 mm (1/8 in) thick, one or two-piece diamond tread (code BDF) or smooth (code BSF), with additional lateral support provided at the wheelwells. Two-piece floors shall be spliced longitudinally and completely welded the full length of the splice. One completely welded lateral steel floor splice is acceptable on bodies over 4880 mm (16 feet) in length. When specified diamond tread (code BDF2) or smooth (code BSF2) steel floor shall be minimum 5 mm (3/16 in) thick.

3.5.3.6 SIDE AND END RACKS.

A full width front rack section, not less than three removable rack sections on each side, and two removable rack sections across the rear shall be provided. Each rack shall be equipped with a locking device to lock the rack to the body. Body hardware shall be attached to the rack slats with not less than 75 mm (3 inches) total weld for each fastener or bolted with not less than four bolts for each fastener. Upright posts shall be steel sections. Rack slats shall be of steel sections not less than 16 gauge with not less than 3 reinforcing ribs. The width of individual slats shall be manufacturer's standard providing that total of slat widths is not less than 60 percent of total rack height. Not less than four slats per rack shall be provided. Slat edges and end corners shall be rounded or enclosed to protect cargo and personnel from sharp edges. Slats shall be riveted, bolted or welded to the inside (loadside) of the upright posts, with rivet or bolt heads against the slats. When welded construction is used, not less than 4 welds shall be applied at each upright post and slat intersection. The front rack section shall be capable of withstanding a horizontal static load equal to one-half the payload capacity of the vehicle without permanent distortion of the rack section or its mounting. When a hydraulic tailgate of the type that folds against the rear side racks is furnished (see 3.1.1.11.1), the two removable rack sections across the rear of body are not required and each side rack section at the rear of body shall be provided with draw-down type of fastening equipped with a locking nut to secure the side racks in place. Rack height shall be a minimum of 102 cm (40 inches). When a hydraulic crane is furnished (see 3.5.3.8), the front rack height may be reduced as necessary to avoid interference with the crane operations. When code BBS is specified, a permanently attached solid front bulkhead, constructed of not less than 12 gauge steel with a screen opening behind the cab window shall be provided in lieu of front end racks. When code DBEM is specified, side and end racks shall not be provided and code BBS shall be provided.

3.5.3.7 BODY MOUNTING.

Body shall be secured with U-bolts, twin studs, or brackets. Body shall be mounted in full accordance with the chassis and body manufacturer's recommended practice.

3.5.3.7.1 U-BOLTS OR TWIN STUDS.

When U-bolts or twin studs are used, there shall be not less than three U-bolts or twin studs per side for class B and C and four U-bolts or twin studs per side for class D, E, and F, each having 14 mm (0.563 inch) body diameter with 16 mm (0.625 inch) minimum thread diameter. Tie-plates shall be at least 13 mm (0.5 inch) thick and a slight deformation upon assembly is permissible. The vehicle chassis frame shall be protected from crushing by using spacer blocks at each mounting point unless the mounting point is located at a full depth frame crossmember. Blocks shall incorporate a keeper strap or groove for the mounting bolt, and shall be of a width and thickness to assure retention. Two tie-back straps shall be provided, one bolted to each side of the rear portion of the body subframe, to maintain body alignment on the vehicle chassis. Forward body mounting bolts shall be located to the rear of the tapered portion of the breaker strips (see 3.5.3.7.4).

3.5.3.7.2 BRACKETS.

When brackets are used, they shall be bolted to the web of the chassis frame rails. The body mounting brackets shall provide means for drawing down the body on the chassis rails, and provisions shall be made to prevent lateral shifting of the breaker strips. When additional holes are required to secure the mounting brackets to the chassis frame rails, they must be located within the area of the rail, which is designated as being safe for drilling in accordance with the chassis manufacturer's body builders layouts. Attachments shall neither interfere with nor obstruct chassis components.

3.5.3.8 CRANE.

When code SAC is specified, a one-man operated, fully hydraulic, articulated boom type crane, mounted on the truck frame between the cab and the platform (see 3.5.3.1) shall be provided. The crane shall conform to all applicable ANSI and OSHA requirements and regulations including OSHA 1926.550. The boom shall consist of an upper and lower section and a hydraulically operated extendable jib(s), and no more than one manual extension capable of extending to a lateral reach not less than 7.3 m (24 ft). Double-acting hydraulic outriggers independently controlled and integrally mounted to the crane base shall be furnished. With the outriggers in the down position, the crane shall be capable of lifting a minimum load of 700 kg (1,500 pounds) when the load is located at a radius of 7.3 mm (24 feet), without causing the vehicle to become unstable. Vehicle shall be deemed unstable when any one of the vehicle wheels lifts off the ground. The boom, when fully extended, shall have a normal lifting range of 7600 mm (25 feet) above ground level and shall fold to a nestable travel height, between the stake body and the truck cab, not more than 2130 mm (84 inches) above the truck chassis frame. Crane controls shall be provided on each side of the vehicle. Crane and outrigger controls shall be accessible from ground level. Each outrigger control shall be located on the same side of the vehicle as the outrigger. Each outrigger landing pad shall be not less than 900 sq. cm (140 square inches).

3.5.3.8.1 CRANE HYDRAULIC SYSTEM.

A hydraulic pump driven from a power takeoff controlled from inside the truck cab shall be provided to furnish power for the crane. The pump shall be of the positive displacement type and shall provide a working pressure of not less than 12.4 megapascals (MPa) (1,800 psi). Controls shall be of the self-centering, fail-safe type with hydraulic bypass overload valves, and a check valve type locking system in boom and outriggers to prevent the load dropping due to hydraulic or power failure. Controls shall have fine metering qualities to provide variable raising, lowering and rotating motions of the crane boom. The crane hydraulic system shall contain the following minimum safety features:

(a) Check valve system in boom and outrigger system to prevent load drop due to hydraulic system failure.

(b) Flow valve in hydraulic lines or cylinder to prevent boom damage due to sudden load-lowering stops.

(c) Cushioning valves in boom rotating hydraulic system for rack-and-pinion mounted cranes to prevent damage due to sudden stops.

(d) Pressure relief valve to prevent loading beyond lifting capacity.

(e) Devices to limit vertical creep of the boom to not more than 25 mm (1 inch) per hour.

(f) Signs with 25 mm (1 inch) lettering visible to the operator at both sets of controls: OUTRIGGERS MUST BE IN PLACE BEFORE LIFT IS MADE.

3.5.3.9 DUMP STAKE AND PLATFORM.

When code BDS is specified, a dump stake/platform body shall be provided. The stake/platform body shall be as specified in 3.5.3 through 3.5.3.6 for the vehicle class furnished, except the rear end racks shall be the manufacturer's standard swing type, hinged to each side rack. The stake/platform body shall be adequately reinforced to provide support for an evenly distributed payload (GVW minus curb weight and operator weight). The body shall be mounted to a hydraulic hoist unit. Locking devices shall be provided near the center of the rear racks to lock closed and to lock the racks to the body. All locking devices shall be operable from the ground. A rear bumper is not required. When a steel floor is furnished on dump stakes, it shall have a smooth finish.

3.5.3.9.1 DUMP STAKE AND PLATFORM BODY MOUNTING ON HOIST.

The body shall be mounted to the hoist unit accordance with the hoist manufacturer's recommendations and shall be reinforced, when necessary, for added strength on hoist operations. Rear body mounting shall include hinges securely welded to the body longitudinal sills, a connecting cross shaft, and a plate securely bolted to the chassis mainframe rails.

3.5.3.9.2 HYDRAULIC HOIST FOR DUMP STAKE AND PLATFORM.

A hydraulic conversion type hoist shall be furnished. Unless otherwise specified (see 6.2), the conversion hoist shall have a minimum lifting capacity rating of class D for Class C vehicles, class E for class D and E vehicles, and class F for class F vehicles in accordance with the National Truck Equipment Association Conversion Hoist Chart. The hoist shall be a double-acting scissors or under body type with an internal bypass system. Hoist hydraulic cylinder piston rods shall be chrome plated. The hoist shall lift the body to a minimum dumping angle of 45 degrees from the top of the truck chassis frame. The hoist shall be capable of lowering the raised body by gravity when the pump is disabled. The pump shall be the direct mount type. The power takeoff, and valve shall be the manufacturer's standard for the hoist model furnished. The valve and power takeoff controls shall be located in the truck cab and shall be accessible from the driver's seat. The location of the controls shall not interfere with the entry and exit of the driver. Hydraulic system and pumping unit shall comply with 3.5.4.8.6 and 3.5.4.8.7.

3.5.3.9.3 SAFETY LOCK.

A mechanical safety lock permanently affixed to the body or hoist shall be provided. The safety lock shall provide positive retention of the body in the up position for servicing or repair. The safety lock mechanism shall not interfere with the operation of the body under any operating conditions.

3.5.3.10 STAKE BODY TARPAULIN, BOWS, AND TIEDOWN DEVICES.

When code BTB is specified, a fitted tarpaulin with knockdown type bows and tiedown devices shall be provided. The tarpaulin shall be fabricated of number 8 cotton duck conforming to type I of CCC-C-419, or of vinyl-coated nylon conforming to type II, class 2 of MIL-PRF-20696. The tarpaulin material shall be reinforced at the corners and other wear points with patches fabricated of the same base material as the tarpaulin. The tarpaulin material shall be water repellent and fire-resistant. The tarpaulin color shall be olive drab. The rear curtain shall be of the roll-up type. The front curtain shall have a window size of not less than 300 mm by 610 mm (12 in by 24 in) and shall be aligned with the rear window of the vehicle cab. The tarpaulin shall completely cover the entire body and shall extend down the sides, front and rear, with the bows in place, to within 75 mm (three inches) of the platform. Bows shall be on the outside of the racks and shall be constructed of metal or metal and hardwood components. At least five bows shall be furnished and shall provide and inside height of not less than 1780 mm (70 inches) between the floor of the platform body and the tarpaulin cover at the top. Not less than five evenly spaced tiedown devices shall be provided on each side of the vehicle body.

3.5.3.11 CARGO BODY.

When code BCS is specified, a cargo body shall be provided. The cargo body shall be as specified in 3.5.3 through 3.5.3.5 and 3.5.3.7 through 3.5.3.7.3 for the class furnished, except that the cargo body shall be 12 feet, 6 inches long by 8 feet wide (nominal). The loadspace shall be minimum 147 inches in length and 88 inches in width. Sides and ends shall be 24 inches high (minimum) with 5 stake pockets furnished on each side. Sides and ends shall be minimum 12 gauge steel. Floor shall be minimum 8 gauge diamond tread plate. Drain holes shall be provided in the front corners. The front panel shall be capable of withstanding a horizontal static load equal to half the payload capacity of the vehicle without permanent distortion. The cargo body shall be adequately reinforced to provide support for an evenly distributed payload (GVW minus curb weight and driver weight). A minimum of 10 crossmembers shall be furnished. Crossmembers shall be minimum 10 gauge and shall be gusseted on each long sill. The tailgate shall be hinged at the bottom and provided with stay-chains of adequate length to retain the tailgate in a horizontal position. 2 steps shall be furnished on each the left and right sides of the tailgate to assist personnel in mounting and dismounting. The rear lights and reflectors shall be recessed in the rear bolster and shall be positioned to prevent damage by the lowering of the tailgate. Grab handles shall be furnished at the rear of the body on both sides. Cargo tiedowns, fully recessed, with 3 inch inside diameter and a 2000 pound load rating shall be furnished in the load space as follows:

a) One centered at the front of the loadspace
b) Four at the outboard edge of each side, equally spaced, the length of the loadspace.

Lashing D rings shall be furnished at the exterior of each top rail, mid way between the front and the rear of the body. D rings and mountings shall be capable of withstanding pulls of 3,000 pounds in any direction without permanent deformation. When D rings are positioned in the raised position, there shall be adequate clearance above the top rail to attach a 2-inch hook.

3.5.3.12 LOAD SECURING STRAPS AND STORABLE WINCH BINDERS.

When code TSW is specified, load securing straps and winch binders shall be provided. Code TSW shall include the following:

a) 4 inch wide by 27 feet long (minimum) nylon straps webbing, breaking strength 20000 lb/9074 kg, assembled breaking strength 15000 lb/6805 kg. Working load limit 5000 lb/2270 kg. Flat hook working load limit 5000 lb/ 2270 kg on one end with aluminum abrasion clip to prevent chaffing.

b) Sliding steel track on curbside, welded to bottom of crossmembers from first crossmember to last crossmember, with removable stop at each end to prevent winches from being lost. Flat steel bar of adequate strength welded to bottom of crossmembers on street side, allowing strap hook to not protrude past side rail of body.

c) Storable winch binders, capable of storing a 4 inch x 27 feet strap placed in the slide track. A standard winch bar shall be provided, for use in winching down load straps.

Quantities of straps and winch binders shall be 6 each for 16 to 18 foot bodies and 7 each for 20 foot bodies and longer.

3.5.4 TYPE IV (DUMP).

Type IV vehicles shall have a hydraulic hoist operated dump body. A rear bumper is not required. Unless otherwise specified (see 6.2), the body shall have dimensions and level capacity of not less than that specified on Table 4.

3.5.4.1 DUMP BODY CONSTRUCTION.

Body sides and front head shall be constructed from not less than 8 gauge (4.176 mm) (0.1644 inch) A570 (50,000 pounds psi yield strength) steel). Body floor shall be no less than 1/4 inch AR235, (100,000 psi yield strength) steel. The front head shall be capable of withstanding a horizontal static loan equal to one-half the payload capacity of the vehicle without permanent distortion. When body floor is constructed in two or more pieces, a continuous seam weld having full penetration shall be provided. Full length, formed rub rails of minimum width to cover rear dual tire treads shall be provided. Not less than two on Class C and D and not less than three on Class E, F, and G, triangular or box-section side braces per side, of not less than 10 gauge (3.416 mm) (0.1345 inch) steel, shall be equally spaced between body front head and full box type rear corner posts and welded to side plates. One horizontal brace (per side) running the entire length of the body, tied into the front and rear corner pillars is acceptable in lieu of vertical braces. They shall be sloped and continuously welded or formed into each side of the body. Front head sheet shall be formed or reinforced for rigidity. Front head and tailgate shall be not less than 150 mm (6 inches) for class C and 200 mm (8 inches) for class D, E, F, and G higher than the sides. Sides shall have pockets provided at each end for insertion of sideboards. The interior of the body shell and the side reinforcements shall be welded with continuous welds. The top rail, sides and tailgate shall be completely boxed and continuously welded. The body shall have sloping running boards and sloping horizontal tailgate braces to minimize the buildup of dirt. Wiring harness across the rear apron shall be enclosed in conduit or polyethylene loom except at terminal ends and shall be secured by hangers to the under body floor, on not more than 12 inch centers. When code DHD is specified, a heavy-duty body shall be provided. The sides and front shall be constructed of not less than 7 guage (0.1792 in.) A570 steel (65,000 psi tensile strength/50,000 psi yield strength). The floor shall be constructed of not less than ¼-inch AR400F one-piece steel (180,000 psi tensile strength/ 145,000 psi yield strength). A tailgate having not less than six sections shall be provided.

3.5.4.2 CAB PROTECTOR.

A cab protector shall be attached to the front end of the body. The cab protector shall extend the full width of the cab. The cab protector shall extend not less than 580 mm (23 inches) forward from the front of the dump body. The cab protector shall be not less than 10 gauge (3.416 mm) for class C and 8 gauge (4.176 mm) (0.1644 inch) steel for class D, E, F, G or 12 gauge (2.657 mm) for class C and 10 gauge (3.416 mm) (0.1345 inch) high tensile, 345 MPa (50,000 psi) yield strength steel. The cab protector shall be capable of supporting an evenly distributed load of not less than 680 kg (1,500 pounds). The cab protector is not intended to be used for additional payload capacity. When specified (see 6.2), and for overseas destinations, even if not specified, the cab protector shall be removable and shall be secured in the dump body for shipment. Fasteners and components shall be packaged, boxed, marked and secured in the vehicle. When code CP is specified, and extended cab protector of not less than 100 cm (40 inches) from the front of the dump body shall be provided.

3.5.4.3 DUMP BODY TAILGATE.

The tailgate panel shall be not less than 8 gauge (4.176 mm) (0.1644 inch) A570 steel (50,000 pounds psi yield strength). The tailgate shall be double acting, opening from top and bottom. The tailgate shall include hardware, support chains, and tailgate latch. The latch shall be operable by a control at the left front corner of the vehicle body. All pivot points on the tailgate release shall be furnished with grease zerks, including top pivot pin. The tailgate shall be reinforced to prevent deformation under load. When code ART is specified, a tailgate bottom air release shall be provided.

3.5.4.4 DUMP BODY UNDERSTRUCTURE.

The dump body understructure shall conform to 3.5.4.4.1 or 3.5.4.4.2, at the manufacturer's option.

3.5.4.4.1 CHANNEL OR I-BEAM UNDERSTRUCTURE.

Body longitudinal sills, each having a minimum section modulus equivalent to that provided by a 125 mm (5 inch) by 10 kg/m (6.7 lbs/ft) channel for class C and 125 mm (5 inch), 14.9 kg/m (10 pounds-per-foot) I-beam for class D, E, F, and G shall be provided to support hoist load. Crossmembers shall be on not more than 380 mm (15 in.) center, for Class C and 300 mm (12 in.) centers for Class D, E, F and G. Cross members having an individual, minimum section modulus equivalent to that provided by a 75 mm by 6.1 kg/m (4.1 lbs/ft) channel for class C and 100 mm (4 inch), 8.0 kg/m (5.4 pounds-per-foot-channel, for class D and E shall be provided to support an evenly distributed load of not less than 6800 kg (15,000 lbs) for class C, 9070 kg (20,000 pounds) for class D, and 10,900 kg (24,000 pounds) for class E body. Crossmembers, each having a minimum section modulus equivalent to that provided by a 100 mm (4 inch), 11.5 kg/m (7.7 pounds-per-foot- I-beam, shall be provided to support an evenly distributed load of not less than 1800 kg/m2 (370 pounds per square foot) of floor area throughout the full lift range for class F and G vehicles. Crossmembers shall be welded to the body shell with not less than 100 mm (4 inch) lengths of weld, front and rear of both ends of each crossmember, and with staggered intermittent welds on not more than 300 mm (12 inch) centers. Contact edges of crossmembers with longitudinal sills and contact edges of welded reinforcements shall be welded for not less than 50 percent of the edge length. Crossmembers shall be welded to the shaped outer rubrail to limit twisting. Gussets, 3/16 inches thick, shall be welded to every other crossmember and each longitudinal sill to provide reinforcement.

3.5.4.4.2 NESTED UNDERSTRUCTURE.

When code UN is specified, a nested understructure shall be provided. Body longitudinal sills shall be formed trapezoidal tubular sections. Longitudinal sills shall extend to the floor of the dump body and shall support the floor between crossmembers. Longitudinal sills shall be capable of supporting the hoist load. Longitudinal for class D, E, F and G shall have a RBM of not less than 52,000 N-m (460,000 inch pounds). Crossmembers shall provide support under the floor every 380 mm (15 inches) or less. Each crossmember shall pass through the longitudinal and be shall be securely welded to longitudinal. Crossmembers shall have a RBM of not less than 12 300 N.M. (109,000 inch pounds). Crossmembers shall be capable of supporting an evenly distributed load of not less than 6800 kg (15,000 lbs) for class C, 9070 kg (20,000 pounds) for class D, 10 900 kg (24,000 pounds) for class E body and 1800 kg/m2 (370 pounds per square foot) of floor area for class F and G bodies. Longitudinals and crossmembers shall be welded for not less than 50 percent of the contact edges to the body floor. Longitudinals shall be welded for not less than 50 percent of contact edges with the body ends. Crossmembers shall be welded for not less than 50 percent at the contract edges with the body side rubrails.

3.5.4.5 HYDRAULIC HOIST.

Unless otherwise specified (see 6.2), the hoist shall have a minimum lifting capacity rating specified in table 4 in accordance with the National Truck Equipment Association Dump Body Hoist Chart. The hoist shall be a double-acting scissors or underbody type with an internal bypass system. Hoist cylinders shall be chrome plated. The hoist shall lift the body to a minimum dumping angle of 50 degrees from the top of the truck chassis frame. The hoist shall be capable of lowering the raised body by gravity when the pump is disabled. The power takeoff, pump and valve shall be the manufacturer's standard for the hoist model furnished. A minimum two-position lever or a minimum two-speed or variable speed hoist lowering valve to provide "feather down" capability shall be provided. Controls and levers shall be located in the cab. Hydraulic system and pumping unit shall comply with 3.5.4.8.6 and 3.5.4.8.7.

3.5.4.6 SAFETY LOCK.

A mechanical safety lock permanently affixed to the dump body or hoist shall be furnished. The safety lock shall provide positive retention of the dump body with the body in the up position for servicing or repair. The safety lock mechanism shall not interfere with operation of the body under any operating conditions.

3.5.4.7 DUMP BODY MOUNTING.

Full length rivet pads or a full-length subframe, shall be attached to the top of the chassis frame rails. The pads or subframe shall prevent the body longitudinal sills from contacting and chafing against the chassis frame rails. Body shall be mounted in accordance with OEM recommended practice.

3.5.4.8 SNOWPLOW.

When code MPS is specified, a hydraulically or electro-hydraulically operated snowplow shall be provided. The snowplow shall be complete with a moldboard, a tripping device, a hitch, a hydraulically operated lifting mechanism, a set of auxiliary lights, a snow deflector or radius curve edge and all other necessary mounting and operating apparatus. The weight of the total snowplow assembly shall not cause the vehicle manufacturer's front axle rating to be exceeded. The plow shall be shipped in the load space and lights shall be shipped within the cab when possible. Brackets and connections shall be installed on all vehicles to enable ready installation of the lights and snowplow at the destination. Snowplow and lights shall be installed on the first vehicle to assure proper operation, and they may be removed for shipment after Government inspection.

3.5.4.8.1 MOLDBOARD.

The moldboard assembly of the reversible type snowplow, exclusive of the snow deflector, shall have a vertical height of not less than 810 mm (32 inches) for classes B through E and 910 mm (36 inches) class F and G, and shall be capable of clearing a path of not less than 2620 mm (8 feet and 7 inches) at a blade angle of 30 degrees, plus 2 degrees, minus 0 degrees. The actual length of the moldboard shall be not less than 3050 mm (10 feet). The moldboard shall be of not less than 7 gauge (4.554 mm) (0.1793 inch) high tensile steel or a one piece unspliced sheet of 9.5 mm (0.375 inch) thick polyethylene material. The polyethylene material shall not embrittle in temperatures as low as -54°F), shall not corrode, and shall have an abrasion resistance factor at least equivalent to steel.

3.5.4.8.2 SNOW DEFLECTOR.

A snow deflector shall be provided the full length of the top of the moldboard. The snow deflector shall be of the manufacturer's standard design to prevent snow from topping the snowplow.

3.5.4.8.3 MOLDBOARD SUPPORTS.

The snowplow shall be equipped with two heavy duty steel casting, full swivel shoes or tow caster wheels for classes B through E. Class F and G shall be equipped with two heavy duty 410 mm (16 inches) full swivel caster wheels with pneumatic tires. Both the caster wheels and swivel shoes shall be adjustable. The caster wheels shall be roller or ball bearing mounted, shall be of the shielded type to prevent entrance of water and foreign matter, and shall have lubrication fittings.

3.5.4.8.4 MOLDBOARD PUSH-FRAME ASSEMBLY.

The push-frame assembly shall attach to the moldboard and hitch in a manner to provide ample road clearance of the assembly and permit sufficient oscillation for the snowplow to follow road contour and clear snow evenly. The positioning of the snowplow moldboard to the right and to the left shall be of the manual angling type and shall be capable of being accomplished by one man without the use of tools. The snowplow shall have a minimum of two angle adjustments both to right hand cast and left hand cast. A shear pin shall be used to lock the snowplow in any of its five plowing positions. Under normal plowing conditions, the shear pin shall be designed to minimize damage to the snowplow and vehicle should the snowplow's leading edge come into contact with an immovable object. When code MPP is specified, the moldboard shall have a power angle capability, with controls located in the cab.

3.5.4.8.5 HITCH.

The plow hitch shall be of the push-frame type designed to be attached to and transmit the entire plowing thrust to the truck frame in such a manner that no plowing thrust shall be absorbed by the truck front axle. Front axle hitch supports, when used, shall be attached in a manner to prevent chafing or other damage. Hitch main frame members and lift frame vertical and horizontal members shall be of adequate size, properly braced, and reinforced to sustain the loads imposed under severe operating conditions. The hitch shall be removable.

3.5.4.8.6 HYDRAULIC SYSTEM.

The hydraulic system shall consist of a power operated pumping unit, an under the hood hydraulic fluid reservoir or a reservoir integral with the hoist, controls, cylinder, hoses, piping, and all other parts essential for normal operation. The system shall incorporate a pressure relief device to prevent buildup of pressures exceeding the rating of any component. Hydraulic hose shall be single wire braid or double wire braid, rubber covered, conforming to SAE J517, and hose fittings shall conform to SAE J516. The hydraulic system shall incorporate a filtration system conforming to SAE J931.

3.5.4.8.7 PUMPING UNIT.

Controls to the pumping unit shall be operable by the truck driver in his normal operating position and shall not interfere with the operation of any truck controls. The hydraulic pump shall be powered by the engine fan belt, an electric motor, or by the engine crank-shaft. Belt driven systems shall be approved by the chassis manufacturer. Fan belt driven and crankshaft driven hydraulic pumps shall be rated for continuous duty. The hydraulic fluid reservoir shall have a capacity of not less than 150 percent of the capacity required to operate the system.

3.5.4.8.8 HOIST CYLINDER.

The snowplow hoist cylinder shall have sufficient travel to hoist the plow to not less than 200 mm (8 inches) ground clearance. The hoisting mechanism, hoist cylinder and hydraulic system shall be capable of holding the snowplow in the fully raised position while the truck is driven over secondary gravel roads at speeds up to 48 km/h (30 mph).

3.5.4.8.9 SNOWPLOW MARKERS.

Snowplow markers shall be provided for the streetside and curbside of the snowplow. The markers shall be removable when not in use. The markers shall eliminate guesswork as to position of the snowplow caused by blind spots.

3.5.4.8.10 HYDRAULIC HOSES.

Hydraulic lines to the hydraulic cylinder and the pump shall be provided with quick disconnect hose couplers. Hose caps, pump caps and hydraulic cylinder caps shall be provided if no other protection system is provided. Caps shall be secured with a corrosion-resistant security device to prevent loss. Caps shall prevent entrance of contaminants into the hydraulic system.

3.5.4.8.11 SNOWPLOW AUXILIARY LIGHTS.

A set of raised auxiliary dual beam headlights, parking, and turn signal lights shall be provided for use with the snowplow. Parking and turn signal lights shall use a single light bulb. Mounts, adapters and an appropriate wiring harness shall be provided. Quick disconnect plugs and receptacles shall be provided and shall be weatherproof, or shall be located in a weatherproof location. A high beam indicator light shall be provided and shall be readily visible to the driver when in the driving position.

3.5.4.9 SAND AND SALT SPREADER.

When code NAS is specified, an under-tailgate type sand and salt spreader shall be provided and shall be easily removable. When code NSP is specified, a skid mounted sand and salt spreader with a material hopper of not less than 2.3 cubic meters (3 cubic yards) capacity shall be provided in lieu of a tailgate type. The sand and salt material feed auger and spreader shall be hydraulically driven by the snowplow hydraulic system when code MPS is specified. When only code NAS is specified, the sand and salt material feed auger and spreader shall be hydraulically driven by a crankshaft driven hydraulic pump; or by its own auxiliary engine driven hydraulic pump. Controls shall be located in the cab. The hose and hose connections shall be specified in 3.5.4.8.10. Fan belt driven and crankshaft driven hydraulic pumps shall be rated for continuous duty.

3.5.4.10 DUMP BED COVER.

A dump bed cover with front wind protector, operated from ground level shall be provided. The dump bed cover shall be constructed of a knit mesh polypropylene material with 70% (nominal) mesh content. When code DBC is specified, a dump bed cover shall not be provided.

3.5.5 TYPE V (WRECKER). Refer to GSA WARRAN Schedule.

3.5.6 TYPE VI (MAINTENANCE/LINE BODY).

Type VI Maintenance/Line trucks shall be furnished with an open (without roof), utility service body with and applicable equipment. Line bodies shall be manufacturer's commercial model as represented in their current technical data and as required herein: The body and cabinetry shall be constructed of corrosion resistant 14 gauge, A40 galvanneal minimum, or other specified material such as all fiberglass (code FG), or all aluminum (code AL), each constructed with strength equal to steel. Units other than steel shall generally conform to the dimensional, layout, performance and the design specified herein, with the exception of basic body material used to accomplish the objectives (e.g. safety tread steel plate floor or equal, etc.). The body shall have a center load compartment with cabinets on each side. The body shall include but not be limited to, the body manufacturer's furnished locks, latches, hinges, wiring harnesses, lights, all mounting hardware and components. Items normally furnished by the chassis manufacturer, such as but not limited to fuel system fill components, shall be used for integrating the body with the chassis. Body installers shall fully confirm to the body and chassis manufacturer's instructions and recommendations.

3.5.6.1 MATERIAL AND DIMENSIONAL REQUIREMENTS.

- Center load compartment shall have a minimum width load space of 57 inches.
- Load compartment floor (treadplate) thickness shall be minimum 7 gauge (3/16 in.), safety tread steel plate.
- Vertical compartment height shall be minimum 114 cm (45 in.), maximum 127 cm (50 in.)
- Cabinet depth shall be not less than 46 cm (18 inches).
- Floor understructure (cross sills) thickness shall be minimum 7 gauge (3/16 in.)
- Load space height shall be minimum 29 inches.
- Bulkhead shall be constructed to a minimum height of 27 inches above the load space floor and shall not be less than 14 gauge galvanneal steel, reinforced for rigidity.
- Bulkhead for code UTR shall be constructed to full height of cabinets. The bulkhead shall be capable of withstanding a horizontal static load equal to 1/2 the payload capacity of the vehicle, without permanent distortion. On fiberglass bodies the bulkhead shall be steel or aluminum. The bulkhead shall be at least the width of the load space and the height of the cab and include openings for rear visibility.
- Interior clear height for code USS shall be minimum 160 cm, (63 inches).

- Interior clear height for code USS2 shall be minimum 190 cm, (75 inches).
- Height of racks above cabinets for code USS shall be minimum 89 cm, (35 inches).
- Height of racks above cabinets for code USS2 shall be minimum 119 cm, (47 inches).
- Width of racks for code USS and USS2 shall be minimum 30 cm, (12 inches).
- Rear doors opening height for code USS and USS2 shall be minimum 150 cm, (59 inches).
- Rear doors opening width for code USS and USS2 shall be minimum 142 cm, (56 inches).

3.5.6.1.1 TAILGATE.

Tailgate shall be constructed of not less than 14 gauge, 1.9 mm (0.0747 in.) single panel galvanneal steel, reinforced for rigidity. Tailgate shall be hinged and equipped with supports for retention in horizontal position and when in the horizontal position shall be aligned flush or slightly lower than floor level. Tailgate shall be minimum 30 cm, (12 in.) high. Aluminum tailgates shall be double paneled construction from a minimum 0.080 in. material.

3.5.6.1.2 CABINET MATERIALS AND CONSTRUCTION.

Cabinet headers shall be not less than 14 gauge 1.9 mm (0.0747 in.) galvanneal steel. Cabinet backs and partitions shall be of not less than 16 gauge, 1.5 mm (0.0598 in.) galvanneal steel. Cabinet shelves shall be capable of supporting a minimum of 200 lbs. each when supported no more than 4 in. in from each end of the shelf. Cabinet doors shall be double panel constructed from not less than 20 gauge 9 mm (0.0359 in.) galvanneal steel with reinforcement. Aluminum and fiberglass body shall have cabinet material and construction of same material(s) as the rest of the body. Strength of finished cabinets shall be at least equal to that of steel construction. The cabinet interior shall be prepared and primed with a light colored gray finish, except that galvanized coated steel shelves need not be painted.

3.5.6.2 CABINET ARRANGEMENT.

The cabinet arrangement shall be as follows:

(A) 9 and 10 foot bodies

One horizontal cabinet with at least a middle shelf of small bins with adjustable partitions, on each side of the body. One full height vertical cabinet with not less than two removable shelves, on each side of the body front. One full height vertical cabinet to the rear of the wheel housing, on each side of the body, with one adjustable shelf.

(B) 11 foot bodies

One horizontal cabinet with at least a middle shelf of small bins with adjustable partitions, on each side of the body. Two full height vertical cabinets with not less than two removable shelves, on each side of the body front. One full height vertical cabinet to the rear o the wheel housing, on each side of the body, with one adjustable shelf.

(C) 12 foot bodies

One horizontal cabinet with at least a middle shelf of small bins with adjustable partitions, on each side of the body. Three full height vertical cabinets with not less than two removable shelves, on each side of the body front.One full height vertical cabinet to the rear of the wheel housing, on each side of the body, with one adjustable shelf.

(D) 14 foot bodies

One horizontal cabinet with at least a middle shelf of small bins with adjustable partitions, on each side of the body. Three full height vertical cabinets with not less than two removable shelves, on each side of the body front. One full height vertical cabinet to the rear of the wheel housing, on each side of the body, with one adjustable shelf.

3.5.6.3 CABINET DOORS.

Cabinet door shall provide access to all portions of each cabinet, and door closures shall be weatherproof incorporating an automotive tubular type neoprene sealing system. Doors shall have full length continuous rod or hem type heavy-duty hinges, with stainless steel hinge pins or stainless steel, bronze, or nylon insert sockets. Latches shall have recessed handles. All doors shall be provided with cylinder type locks, operable from the same key but having various combinations of cylinder locks, as available, between vehicles on multi-unit contracts. Moving parts of latches and locks shall be constructed of, or plated with corrosion-resistant material. All vertical doors shall be furnished with double spring loaded stays to facilitate both hold open and closing, and doors shall not interfere with each other when open. Horizontal doors shall have two (2) removable pivoting supports to hold open in the 90-degree position and be reinforced so as to permit their use as a shelf. Latches and striker plates shall be non-welded, easily replaced and striker plates shall be readily adjustable. Fiberglass bodies shall be reinforced in the latch and hinge hardware areas.

3.5.6.4 REAR BUMPER.

A heavy-duty step bumper shall be required. A safety-tread steel plate step, integrated with the frame attached rear bumper, shall be furnished; extending across the width of the body, having a step surface not less than 23 cm (9 inches) deep.

3.5.6.5 MAINTENANCE /LINE BODY VEHICLE OPTION CODES.

The following option codes and their requirements are offered for selected vehicle applications:

3.5.6.5.1 Code AL — Aluminum Body. When code AL is specified, the body shall be constructed of aluminum with strength equal to specified steel.

3.5.6.5.2 Code FG — Fiberglass Body. When code FG is specified, the body shall be constructed of fiberglass having equal strength to that of the specified steel.

3.5.6.5.3 Code PCI — Compartment Paint Interior. When code PCI is specified, all cabinet interiors and doors shall be completely prepared, primed, and finished painted with the same finish paint as the exterior of the body.

3.5.6.5.4 Code UPR — Pipe Rack. When code UPR is specified, a pipe rack mounted on top of the curbside cabinets shall be provided. The front of the rack shall permit pipes to clear the cab door. The rack shall be equipped with adjustable chain/spring hold down devices to secure pipes in transit.

3.5.6.5.5 Code URH —Rope Hooks. When code URH is specified, a minimum of four rope hooks on the inside of a vertical cabinet in lieu of adjustable shelves, shall be provided.

3.5.6.5.6 Code URO — Overhead racks with ladder clamps. When code URO is specified, removable overhead ladder racks with adjustable brackets shall be provided. (Code URO is not available with code USS or USS2)

3.5.6.5.7 Code USM—Side mounted ladder racks. When code USM is specified, side mounted ladder racks with adjustable brackets shall be provided. (Code USM is only available with code USS or USS2).

3.5.6.5.8 Code USS — Superstructure body with standard interior loadspace. When code USS is specified, the Maintenance/Line Body shall be provided with an enclosed center load space with inside shelves on each side of the enclosed superstructure and shall be in accordance with 3.5.6.1 as required for code USS. This body shall be furnished with doors opening from the outside; equipment racks above the cabinets, with openings to the inside of the body; a fixed weather tight roof (superstructure) over the load space and double doors at the rear. A bulkhead fixed safety glass window shall be furnished and aligned with rear cab window. The double rear doors shall be hinged at the sides and shall completely enclose the body interior. The doors shall be equipped with safety glass windows in the upper section, doors locks with cylinder locks and retainers for keeping the doors in the open position. The doors shall be quipped with seals to prevent the entry of dust and water. The center load space shall have the interior-finish in accordance with 3.5.6.12.

3.5.6.5.9 Code USS2 — Superstructure with increased interior loadspace height. When code USS2 is specified, the Maintenance/Line Body shall be provided with an enclosed center load space as specified in 3.5.6.5.8 and shall be in accordance with 3.5.6.1 as required for code USS2.

3.5.6.5.10 Code UTC — Spare tire carrier in loadspace. When code UTC is specified, a vertically mounted tire assembly on a carrier shall be provided. The tire assembly shall be located in the front end of the load space behind the cab. When a load space roof prevents vertical mounting, the tire assembly may be secured horizontally in the load space.

3.5.6.5.11 Code UTR — Telescoping roof. When code UTR is specified, a telescoping roof and end gate enclosure shall be provided. The telescoping roof shall be provided with automatic catches that lock the roof in full open and full closed positions. The roof shall be constructed to ensure proper roof

drainage. The end gate or door enclosure shall have side opening style doors, or two part folding, or single type that can be swung up without interference, and laid on the roof. A single handle, with key lock, that operates two latches; one on each side; shall be furnished on the end gate enclosure. The load area shall be painted the same color as the body interior. The bulkhead shall comply with 3.5.6.1 as specified for Code UTR.

3.5.6.5.12 Code UVB — Vise Bracket and Pipe Rest. When code UVB is specified, a removable pipe vise bracket and pipe rest shall be provided on the right side cabinets at rear. The vise plate shall be horizontal, attached to a sliding bar and locked in place by a vertical pin.

3.5.7 TYPE VII (VAN).

Type VII vehicles shall have an overall height of not more than 3810 mm (150 inches) and the minimum dimensions specified in table 7. Effective means shall be taken to prevent electrolytic action between dissimilar metals.

3.5.7.1 VAN BODY.

The body subframe, rear corner posts, rear header, rear crossmember, rear bumper and dock bumper shall be constructed of steel. Body, front posts, roof panels, rub rails or buffer sheets and, unless FRP/plywood panels are specified, code FRP (see 3.5.7.1.1) side and front wall panels shall be constructed of aluminum. Roof bows and side posts shall be aluminum or galvanized steel (see 3.5.7.4). The steel used shall be of the minimum gauges specified for carbon steel; high tensile steel used may be two gauges lighter weight in accordance with US Standard gauges.

3.5.7.1.1 FRP/PLYWOOD PANELS.

When code FRP is specified, FRP/plywood side and end panels shall be provided. FRP/plywood panels shall be fabricated of one-piece plywood core laminate with fiberglass reinforced plastic. The plywood furnished shall equal or exceed U.S. Department of Commerce Standard No. 1, C-D (plugged) with exterior glue and with all plies group 1 species or better. Core material shall be butted, scarfed or finger-joined with joint gaps not greater than 3.2 mm (0.125 inch). The fiberglass reinforced plastic (FRP) shall contain not less than 0.51 kg (18 ounces) fiberglass woven roving material. The plastic shall be of the thermoset polyester family of resins. The plastic shall be fully cured under heat and pressure to ensure the resins from an integral bond to the plywood core. The exterior surfaces shall consist of a gelcoat or tedlar finish of 0.38 mm + 0.08 mm (.015 inch + .003 inch). The gelcoat or tedlar finish shall be pigmented manufacturer's standard white. Panels shall have an overall finished panel thickness of not less than 16 mm (0.625 inch). Finished panels shall exhibit a smooth vehicle exterior surface with no evidence of discontinuity.

3.5.7.1.2 FRP/PLYWOOD PANEL INSTALLATION.

The FRP/plywood panels shall be installed with extruded aluminum corner posts, top rails, bottom rails and side door frames. Panels shall be one-piece. Vertical intermediate body posts shall not be used. Posts, rails and side door frames shall have receiving edges providing attachment to panels with fasteners. Panels shall be secured to posts and rails using through-fasteners with a head diameter of not less than 13 mm (0.50 inch). Panel edges shall be sealed with waterproof mastic prior to installation. Installed panels shall be sealed with a high performance silicone caulking compound on all enclosing edges. All fastener installations shall be waterproof.

3.5.7.1.3 VAN BODY WIND DEFLECTION.

Unless otherwise specified herein, an aerodynamically streamlined body front shall be incorporated into the design of the body to direct airflow around the sides and over the top of the van body. The construction shall be integral with the van body front wall, sidewalls and roof, giving a curved front radius. When code BWD is specified, for vehicles with standard cabs only, a wind deflector fairing shall be attached to the upper front face of the van body. The deflector shall have an aerodynamic fairing shape to direct airflow around the sides and over the top of the van body. The deflector fairing shall have a rounded nose with a convex profile in both side and top views, forming a smooth compound curved surface blending into the rectangular body cross-section. The nose of the fairing shall project forward sufficiently to achieve a significant drag reduction at low yaw angles, and shall have a large enough radius to produce minimal flow separation at yaw angles of up to 20 degrees. In no case shall the forward portion of the fairing be less than 560 mm (22 inches) or less, if required by body parts from the front face of the van body. The lower edge of the fairing shall be located as required to minimize drag due to turbulent airflow from the cab. The fairing construction material shall be molded fiberglass. Design operational limits shall include forward vehicle speeds of 97 km (60 mph) during wind gusts of 97 km (60 mph) from any direction.

3.5.7.2 VAN BODY SUBFRAMING.

Van body subframing shall be welded steel construction, braced at all points of stress. Crossmembers, shall be full width, minimum 7.5 cm (3 inches) depth, of full channel, I-beam or equivalent section, steel construction, attached to longitudinal sills by welds on maximum 30 cm (12 inches) centers. When subframing is a welded assembly, angle gussets (when used), crossmembers, longitudinal sills, and welded reinforcements (when used) shall be joined by weld for not less than 50 percent of the length of the contact edge(s). Spacing of crossmembers shall be equal, ahead of, and to the rear of the wheels. Longitudinal sills shall be constructed of structural steel channels, structural steel

I-beams, formed steel channels or form rolled steel I-beams. Formed channel sills shall be reinforced with formed channel reinforcements within the sill. Formed channel reinforcements shall be provided at each subframe crossmember attachment point and at each chassis mounting point. Form rolled I-beam sills shall be high tensile 345 MPa (60,000 psi) yield steel, not less than 100 mm (4 inches) high and not less than 4.75 kg/m (3.190 pounds per foot). Formed channel crossmembers, gussets, formed channel longitudinal sills and reinforcements shall be of not less than 7 gauge (2.39 mm) (0.094 inch) steel. Extruded aluminum or steel side and front rails shall be furnished. When steel side and front rails (out-rails) are furnished they shall be of not less than 12 gauge (2.657 mm) (0.1046 inch) steel. Design of the subframe shall permit low floor height, while providing tire chain clearance, and shall permit vehicle operation at speeds up to 88 km/h (55 mph) over improved roads, when loaded with an evenly distributed payload to the rated GVW, without evidence of permanent deformation. Understructure shall be rust proofed in accordance with FED-STD-297.

3.5.7.3 VAN BODY FRAMING.

Side and front post construction of aluminum or galvanized steel bodies shall be extruded aluminum and shall be not less than 29 mm (1.125 inches) in depth and 0.49 kg/m (0.330 pound per foot) when side and front wall posts are spaced on 406 mm (16 inch) maximum centers. Side and front post construction shall be extruded aluminum and shall be not less than 32 mm (1.25 inches) in depth and 0.64 kg/m (0.43 pound per foot) when side and front wall posts are spaced on 460 mm (18 inch) maximum centers. Front corner posts, when used, shall be extruded aluminum and shall be not less than 25 mm (1 inch) in depth and 0.72 kg/m (0.482 pound per foot). When front radius corners without front corner posts are used, the radius corners shall be of not less than 1.8 mm (0.071 inch) aluminum or 0.94 mm (0.037 inch) stainless steel, attached to the nearest side and front posts. The front structure shall be capable of withstanding a horizontal static load equal to 0.4 times the payload capacity of the vehicle without permanent distortion. Rear corner posts shall be provided and shall be of not less than 10 gauge (3.416 mm) (0.1345 inch) galvanneal or 12 gauge (2.67) (0.1046 inch) stainless steel.

3.5.7.4 VAN BODY EXTERIOR.

The roof assembly shall be standard for the vehicle, and shall be constructed to ensure drainage. Roof support bow construction shall be extruded aluminum, or not less than 18 gauge (1.214 mm) (0.0478 inch) galvanized steel, not less than 35 mm (1.38 inches) in depth. When aluminum roof support bows are spaced on 610 mm (24 inch) maximum centers, the roof bows shall be not less than 25 mm (1 inch) in depth and 0.54 kg/m (0.36 pound per foot), and the roof panel shall be not less than 0.81 mm (0.032 inch) aluminum alloy. When aluminum roof supports bows are spaced on 460 mm (18 inch) maximum centers, the roof bows shall be not less than 25 mm (1 inch) in depth and 0.57 kg/m (0.38 pound per foot), and the roof panel shall be not less than 0.64 mm (0.025 inch) aluminum alloy. When steel roof support bows are used, they shall be spaced on not more than 610 mm (24 inch) centers and the roof panel shall be not less than 1.0 mm (0.040 inch) thick aluminum alloy. Unless FRP/plywood panels are specified (see 3.5.7.1.1), body side panels shall be not less than 0.81 mm (0.032 inch) prepainted aluminum alloy. Unless otherwise specified (see 6.2), and except as follows, the color of the prepainted side panels shall be the manufacturer's standard white. When a semigloss or lusterless vehicle exterior color is specified (see 3.1.1.1), the side panels shall be painted to match that exterior color (see MIL-HDBK-1223). Body side panels shall be removable to facilitate body repair. All roof and body seams and joints shall be weatherproof. The body front posts and top front rail shall have a radius of not less than 115 mm (4.5 inches). All body and rubrails shall be extruded aluminum. Rub rails or buffer sheets extending outwards beyond the body skin shall be provided on both sides of the body. The rub rails or buffer sheets shall be permanently attached, or shall be an integral part of the exterior of the body at the floor line. When code BR is specified, the roof panel over the cargo section of the van truck shall be translucent white, fiberglass reinforced, polyester material, minimum 1.8 mm (.070 in).

3.5.7.5 VAN BODY INTERIOR.

Two interior domelights shall be furnished. Two three-way domelight switches, both controlling both lights, shall be furnished. One switch shall be located on the rear of the curbside wall recessed to prevent damage by cargo or equipment and shall be accessible by an operator standing on the ground at the curbside. The other switch shall be located in the cab with an indicator light. When aluminum side walls are required, the interior of the body walls shall be lined with not less than 9.6 mm (3/8 inch) exterior grade plywood on the side walls and not less than 13 mm (1/2 inch) exterior grade plywood on the front wall, all full height. When front corner posts are not used, interior radius corners shall be lined with aluminum or 3.2 mm (1/8 inch) thick fiberglass material and the scuff plate shall extend completely around the front radius corners. When steel roof bows are furnished, an isolating material shall be installed between the roof skin and the roof bows to prevent electrolytic action. When code CRP is specified, sidewall posts shall be the logistic type. Logistic posts shall be minimum 12-gauge steel and shall be 1 1/4 inch (nominal) deep; with "E" type logistics slots on 4-inch centers land shall be rated at 500 pounds per foot of body length.

3.5.7.6 SCUFF PLATE.

A 300 mm (12 inch) high, 12 gauge (2.657 mm) (0.1046 inch), smooth steel scuff plate, or an aluminum scuff plate of a thickness, providing an equivalent resistance to puncture, shall be installed on the front and side walls at the floor level. The entire scuff plate shall be treated or coated to resist corrosion (for steel) and need not be painted. The scuff plate shall be installed with corrosion-resistant countersunk screws, riveted, or welded to formed corner plates.

3.5.7.7 INTERIOR ROPE TIES.

When code BRT is specified, interior rope ties, either fold-down lashing rings, rope cleats, or rod type, shall be installed and secured to wall frame members. When code FRP is specified, interior rope ties using through fasteners with a head diameter of not less than 13 mm (0.50 inch) shall be provided. FRP/ plywood fasteners installation shall be waterproofed and exposed fasteners shall be painted to match the vehicle exterior. A minimum of 36 rope ties shall be arranged in three evenly spaced tiers, four rope ties per tier on each wall, including the front wall. The first tier shall be located just above the scuff plate, the second tier at 1/3 of the wall height, and the third tier at 2/3 of the wall height. Rope ties shall project not more than 9.5 mm (0.375 inch) into the cargo area beyond the wall lining. Rope tie protrusions shall be rounded and constructed to prevent injury to personnel and snagging of payload inside the cargo area. Note: Code BRT is not available when code CRT is specified.

3.5.7.8 CARGO RESTRAINING TRACK.

When code CRT is specified, cargo restraining track shall be installed on each interior sidewall. The cargo restraining track shall be mounted in two tiers, horizontally on each sidewall. The first tier shall be located just above the scuff plate, the second tier at 2/3 of the wall height. Each cargo restraining track shall be the full length of the van body interior. Tracks shall be attached between posts through full-length wood fillers, to the side wall lining, or not more than 150 mm (6 inch) centers. The track fitting holes or slots shall be on approximately 64 mm (2-1/2 inch) centers. The cargo control tracks shall be fabricated of steel with a thickness of not less than 12 gauge (2.657 mm) (1.046 inch). Two cargo control track bars shall be provided. The tracks and cargo control bars shall be capable of withstanding a rearward static load of 17.8 kN (4,000 pounds) without permanent deformation. Code CRT is not available when code CRP is specified.

3.5.7.9 VAN BODY FLOOR.

The floor shall be of laminated hardwood not less than 29 mm (1-1/8 inch). When code BFA is specified, a diamond tread aluminum plate floor, 3.2 mm (1/8 inch) thick and an underlay laminated hardwood of not less than 29 mm (1-1/8 inch) thick, shall be provided. Wood parts shall be treated in accordance with 3.1.1.5. Wood floorboards shall be attached to the subframe at crossmembers with self-tapping, countersunk, corrosion-resistant screws. When code FLU is specified, a reinforced floor shall be provided. The reinforced floor shall withstand concentrated loads imposed by forklifts having a 6350 kg (14,500 lbs.) axle load supported by 180 mm (7 inch) wide tires spaced 760 mm (30 inches) apart on the tire centerline.

3.5.7.10 VAN BODY ROLL-UP OVERHEAD REAR DOOR.

Unless otherwise specified (see 3.5.7.11), a full width, roll-up, overhead rear door shall be provided. The door shall provide a clear opening of not less than 2030 mm (80 inches) in width and not less than 1950 mm (77 inches) in height. The door shall be of the sectional type having not less than five sections. Door sections shall incorporate joints of the tapered tongue and groove type or of shiplap type. The door shall be plastic-covered or aluminum-covered 19 mm (3/4 inch) exterior plywood construction. Door section corrosion-resistant hinges shall be mounted on the inside of the door, not less than four hinges at each section joint. The door track shall be manufacturer's standard corrosion-resistant type equipped with a positive stop at the end of the track. Door rollers, counterbalance unit and cables of corrosion-resistant construction shall be the manufacturer's standard. The door shall be weather tight. A heavy duty, corrosion-resistant, cam operated, lever type lock shall be provided, equipped with provisions for the use of a padlock. One heavy duty, corrosion-resistant grab handle, closed type, shall be provided on the outside bottom on the door. One nylon pull-down strap, not less than 50 mm (two inches) wide and 300 mm (12 inches) in length, shall be provided and located adjacent to the door lock. Roll-up doors shall conform to TMC RP 710.

3.5.7.11 VAN BODY DOUBLE REAR DOORS.

When code BDD is specified, double rear doors shall be provided, full width and height, with bracing to prevent sagging, and equipped with three cast steel, or equal, hinges per door. The door locking devices shall include not less than three bolts or latches, located at top, bottom and center of the door. Cam type locking devices may be furnished at the top and bottom of the door. The center locking device shall be provided with an operating handle and shall be installed to ensure positive closing under all operating conditions. Provisions for the use of a padlock shall be furnished. The van body shall be equipped at the sides with catches for holding the doors in the fully open position. Hardware shall be the manufacturer's standard. Rear doors shall conform to TMC RP 711.

3.5.7.12 VAN BODY REAR DOCK AND DROP BUMPERS.

A channel type rear dock bumper of not less than 10 gauge (3.416 mm) (0.1345 inch) steel and not less than 75 mm (three inches) in height shall be provided. The dock bumper shall be integral with the body and located not less than 35 mm (1 inch) below the rear door(s). The dock bumper shall be the full width of the body. A drop bumper with crossbar shall be provided in addition to the dock bumper.

3.5.7.13 VAN BODY MOUNTING.

Mounting of the van body shall be as specified in 3.5.3.7 through 3.5.3.7.3.

3.5.7.14 VAN BODY SIDE DOOR.

When code BSD is specified, a curbside swing door, not less than 178 cm (70 in.) high and not less than 76 cm (30 in.) wide shall be provided. The door shall be located near the center of the body. The door shall be of aluminum faced plywood or of all aluminum with bracing to prevent sagging. The door shall be

equipped with at least three hinges. A cam type locking device shall be provided with an operating handle and shall be installed to ensure positive closing under all operating conditions. Provisions shall be incorporated for a padlock. Handles shall be located to permit operation from ground level. The hardware shall be manufacturer's standard. The door shall have a weather tight rubber or plastic seal around the perimeter. The body shall be equipped with devices to hold door in a fully open position. Side doors on refrigerated van shall be insulated and sealed as required for designated classification.

3.5.8 TYPE VIII (REFRIGERATOR VAN).

Type VIII vehicle shall have a maximum overall height of 3810 mm (150 inches), minimum interior width of 2080 mm (82 inches), minimum interior height of 2030 mm (80 inches), and the minimum cab-to-axle and body length specified in table 8.

3.5.8.1 REFRIGERATOR VAN PERFORMANCE.

The refrigeration unit cooling capacity shall reduce the air temperature in the van body from 38°C (100°F) to -18°C (O°F) in not more than five hours while the vehicle is in an ambient air temperature of not less than 38°C (100°F) The unit shall maintain -23°C (-10°F) in the van body under normal service conditions. The temperature shall be thermostatically controlled by means of a calibrated, manually adjustable device which shall maintain any selected temperature, within 2°C (4°F), from 2°C (35°F) to -23°C (-10°F). When code R35 is specified, the unit shall also have the heating capability to maintain the interior of the refrigerator van at 2°C (35°F), when the ambient air temperature is -32°C (-25°F), at a road speed of 88 km/h (55 mph).

3.5.8.2 REFRIGERATOR VAN BODY.

The body shall be constructed as specified in 3.5.7.1 through 3.5.7.4 for type VII vehicle including aluminum scuff plate. Vertical members that support the outer panels and the inner panels may have fiberglass transverse spacers to prevent heat transfer. Inner panels shall be secured to the inner vertical members.

3.5.8.2.1 INSULATION.

Insulation required for refrigerator van conformance to 3.5.8.1 shall be furnished. Insulation shall be of the foam-in-place type. The insulation shall have a K-factor of not more than 2.16 W/m2/°C/cm (0.15 Btu per square foot per degree Fahrenheit per hour per inch of thickness). Insulation shall not shrink or swell during the life of the body. The insulation shall be of cellular structure with closed cells. Insulation shall be nonhygroscopic, resistant to fungus growth and vermin retention, and shall be resistant to the passage of air and absorption of water.

3.5.8.2.2 REFRIGERATOR VAN INNER PANELS.

Inner panels including the roof panels, shall be ribbed or flat fiberglass sheet, a normal 2.4 mm [3/32 (0.09 minimum] inches) thick.

3.5.8.2.3 REFRIGERATOR VAN FLOOR.

The floor shall be of extruded aluminum alloy sections having equally spaced longitudinal corrugations not less than 25mm (1 inch) in height and approximately 25mm (1 inch) in width. Floor sections, with corrugations lengthwise of body, shall overlap and shall be sealed or shall be welded full length to prevent leakage of moisture through floor to the insulation. The floor surface of the corrugations shall have extruded longitudinal ribs approximately 3.2 mm (0.125 inch) high and 3.2 mm (0.125 inch) wide, and spaced on 4.8 mm (0.188 inch) centers. The ribs shall be knurled or serrated on approximately 4.8 (0.188 inch) centers to provide an anti-skid surface. When code FLU is specified, the floor shall be reinforced to withstand concentrated loads imposed by forklifts having a 6350 kg (14,000 lb) axle load supported by 180 mm (7 inch) wide tires spaced 760 mm (30 inches) apart on the tire centerline. Sides and front of floor shall have an inverted skirt extending upwards for a distance of not less than 125 mm (five inches) and shall be fitted between insulation and the inner panels. Floor design shall permit vehicle operation at speeds up to and including 88 km/h (55 mph), over improved roads, with a concentrated load of not less than 975 kg/m2 (200 pounds on any square foot) of floor area.

3.5.8.2.4 REFRIGERATOR VAN REAR BUMPER.

Rear dock and drop bumpers conforming to 3.5.7.11 shall be provided. Unless a hydraulic tailgate is specified, the drop bumper shall be of the shelf, step type, extending not less than 230 mm (9 inches) to the rear. The step surface shall be of self-cleaning grating. The corners shall have a radius of not less than 25 mm (1 inch). All edges of the grating shall be enclosed and free of ragged or sharp edges. A vertical closure plate with cutouts for lights shall extend from the body down to the self step. The load carrying capacity of the bumper step shall be not less than 410 kg (900 lb) applied vertically and uniformly distributed over any two, 127 mm (5 inch) increments of step width [see Federal Motor Carrier Safety Regulation 399.207(5)].

3.5.8.2.5 REFRIGERATOR VAN REAR DOORS.

Unless otherwise specified, two full width doors shall be provided. Doors shall be insulated so that body insulating efficiency will not be reduced. A door gasket shall be installed to insure a seal. A door locking device, with operating handle, shall be installed to provide positive closing action and shall have provisions for use of a padlock. The door shall be capable of being opened from inside when locked. The rear doors shall provide an opening within 100mm (4 inches) of the full width and the full height of the body interior. The doors also shall conform to 3.5.7.10.

3.5.8.2.6 REFRIGERATOR VAN ROLL-UP OVERHEAD REAR DOOR.

When code ROD is specified, a full width, roll-up, rear overhead door shall be provided. The door shall be of the sectional type having not less than five sections. Door sections shall be not less

than 29 mm (1.125 inch) thick pultruded fiberglass filled with polyurethane foam with molded plastic end caps, or equal. Door insulation shall maintain body insulating efficiency. Door gaskets shall be installed and shall be designed to ensure a positive seal. A door locking device, with operating handle, shall be installed to provide positive closing action and shall have provisions for the use of a padlock. The door shall be capable of being opened from inside when locked. Door section corrosion-resistant hinges shall be mounted on the inside of the door, not less than four hinges at each section joint. Door track shall be the manufacturer's standard corrosion-resistant type equipped with a positive stop at the end of the track. Door rollers, counterbalance unit, and cables of corrosion-resistant construction shall be the manufacturer's standard. The door shall be weather tight. One heavy duty corrosion-resistant grab handle, closed type, shall be provided on the outside bottom of the door. One nylon double-loop pull-down strap, not less than 38 mm (1.5 inches) wide and 300 mm (12 inches) in length, shall be provided and located adjacent to the door lock. The door opening shall be within 125 mm (five inches) of the full width and within 230 mm (nine inches) of the full height of the body interior.

3.5.8.2.7 REFRIGERATOR VAN INTERIOR LIGHT.

Two interior dome lights shall be provided. A recessed control switch controlling both lights shall be located near the rear door, accessible to an operator standing on the ground at the curbside. A circuit opening switch controlling both lights, shall be operated by closing the door. Fixtures, switches and wiring shall be moisture proof and shall be accessible for repairs.

3.5.8.2.8 REFRIGERATOR VAN ACCESS STEPS.

Access steps and grab handle(s) shall be provided on the front of the body leading up to the refrigeration unit. Steps shall be spaced vertically on not more than 380 mm (18 inches) centers. A platform for servicing the refrigeration unit shall be provided above the cab roof. The platform shall be of aluminum tread plate or open grating, not less than 280 mm (11 inches) deep, not less than the width of the refrigeration unit, and shall be readily accessible from the access steps.

3.5.8.2.9 REFRIGERATOR VAN WIND DEFLECTION.

An aerodynamically streamlined body front shall be incorporated into the design of the body. The construction shall be integral with the van body front wall, sidewalls and roof, giving a curved front radius.

3.5.8.2.10 REFRIGERATOR VAN BODY MOUNTING.

Mounting of the body shall be as specified in 3.5.3.7 through 3.5.3.7.3.

3.5.8.3 REFRIGERATION UNIT.

The refrigeration unit shall contain all components, equipment and accessories normally furnished on the manufacturer's standard unit for comparable commercial applications and shall include all components and features specified herein. The refrigerating capacity shall be adequate to efficiently obtain the performance requirements specified herein. Applicable components of the refrigeration unit shall be mounted on a frame attached to the front of the van exterior. The unit shall incorporate lifting eyes to facilitate removal for installation. The unit shall extend into, but occupy a minimum of, cubage within the van. All components and assemblies shall withstand vibration encountered in normal vehicle operation. The refrigerant shall be: hydrochlorofluorocarbon (HCFC); hydrofluorocarbon (HFC; or other alternative technology. Chlorofluorocarbon (CFC) refrigerant is not acceptable. The unit shall be designed for use with both the primary and secondary power units (see 3.5.8.3.3 and 3.5.8.3.4) with mean for rapid conversion from one to the other. Components requiring lubrication with grease shall be provided with pressure type grease fittings with flush type check ball. Radio interference suppression (see 3.4.2.9) shall be furnished.

3.5.8.3.1 TEMPERATURE CONTROL SYSTEM.

The temperature control system shall provide regulation of the refrigerator temperature.

3.5.8.3.2 COMPRESSOR.

A piston type compressor, with adequate performance characteristics for the specified requirements, shall be installed.

3.5.8.3.3 PRIMARY POWER SOURCE.

An air-cooled or water-cooled auxiliary engine with horsepower and torque capacity for maximum compressor requirements shall be installed for use while the vehicle is moving and at rest. Engine accessories shall include a starter (with a device to prevent the engine from driving the starter), and a generator or alternator. For gasoline engines, choke and resistor type spark plugs shall be provided. Provision shall be made to permit starting the engine under no-compression load. Unless otherwise specified, for gasoline engine driven vehicles, the auxiliary engine shall operate on diesel fuel and shall be equipped with its own fuel tank with min. 20 gal capacity. When specified for gasoline engine driven vehicles (see 6.2) and when heating of the refrigerated body is not required in cold weather, the auxiliary engine shall operate on the same type of fuel as the truck engine. For diesel engine driven vehicles, the auxiliary engine shall operate on the same type of fuel as the truck engine. When the auxiliary engine operates on the same type of fuel as the truck engine, fuel to operate the auxiliary engine shall be supplied from the truck's main fuel tank(s). When two main fuel tanks are furnished on the truck, both shall be connected to the auxiliary engine in a manner ensuring continued operation of the auxiliary engine with either one of the tanks empty. An accessible fuel shut-off valve shall be provided. The system shall conform to Federal Motor Carrier Safety Regulations 393.65 and 393.67. When a water-cooled auxiliary engine is furnished, visual means of checking the coolant level shall be provided and the cooling system shall be serviced in accordance with 3.4.26.1.

3.5.8.3.4 SECONDARY POWER SOURCE.

An auxiliary 208-volt, 3-phase, 60-hertz AC electric motor, with adequate horsepower and torque capacity for maximum compressor requirements, shall be installed for use when the vehicle is at rest. A slave receptacle, wired to the motor, shall be mounted on the van body or on the refrigeration unit control panel to accommodate an outside power source. All electrical materials and workmanship shall conform to the requirements of the National Electrical Code (NFPA No. 70). When code RDO is specified, a secondary power source shall not be required and the refrigeration unit shall be powered by the primary power source (3.5.8.3.3) only.

3.5.8.3.5 CONDENSER.

A condenser, designed and built according to best current commercial practice and adequate for the requirements specified herein, shall be provided.

3.5.8.3.6 RECEIVER.

A receiver of adequate strength and capacity, constructed of welded steel, shall be furnished.

3.5.8.3.7 EVAPORATOR.

A coil type or plate type evaporator, designed and built according to best current commercial practice and adequate for the requirements specified herein, shall provided. The evaporator shall incorporate an evaporator fan and a defroster.

3.5.8.3.8 DEFROSTER.

Means shall be provided to bypass, when desired, refrigerant from the compressor discharge line directly through the evaporator to defrost the unit. A separate switch shall control the bypass valve and the discharge air duck damper.

3.5.8.3.9 DEHYDRATOR.

A dehydrator, with sufficient dehydrating capacity for the system, shall be installed in the refrigerant line. Means shall be provided to prevent the dehydrator from contaminating the refrigerant.

3.5.8.3.10 STRAINER.

A strainer shall be installed in the liquid line between the dehydrator and the expansion valve.

3.5.8.3.11 EXPANSION VALVE.

The expansion valve shall automatically control refrigerant flow by thermostatic means, or equal. Thermostatic expansion valves shall incorporate a superheat adjustment.

3.5.8.3.12 THERMOMETER.

A thermometer that registers the inside temperature of the van shall be furnished. The thermometer shall be visible to the driver from the normal driving position. Mirrors may be furnished to provide visibility for thermometer reading by the driver. If a column type thermometer is furnished, a guard shall be provided to protect the column and shall be so located as not to obscure the reading.

3.6 WORKMANSHIP.

A. Vehicles shall be free from defects, which may impair their serviceability or detract from appearance.

B. All bodies, systems, equipment and interfaces with the chassis shall be done in accordance with the OEM's Body Builders Book. Whenever dissimilar metals are used they shall be insulated against corrosive action.

C. All components will be new. Defective components shall not be furnished. Parts, equipment and assemblies which have been repaired or modified to overcome deficiencies shall not be furnished without the approval of the purchaser. Component parts and units shall be manufactured to definite standard dimensions with proper fits, clearances and uniformity. Welded, bolted, and rivet construction utilized shall be in accordance with the highest standards of industry. General appearance of the vehicle shall not show any evidence of poor workmanship.

D. The following shall be reason for rejection:

1. Rough, sharp or unfinished edges, burrs, seams, corners, and joints.

2. Non-uniform panels. Edges that are not radiused, beveled, etc.

3. Paint runs, sags, orange peel, "fish eyes" etc., and any other imperfection or lack of complete coverage of paints or coatings.

4. Body panels or components that are uneven, unsealed, or contain cracks, dents or have voids.

5. Misalignment of body fasteners, glass, viewing panels, light housings, other items with large or uneven gaps, spacing etc. such as door, body panels and hinged panels.

6. Improperly fabricated and routed wiring or harnesses, and electrical connections.

7. Improperly supported or secured hoses, wiring harnesses, mechanical controls etc., including interference with other components.

8. Interference of chassis components, body parts, doors etc.

9. Leaks of any gas, vacuum, or fluid lines (air conditioning, coolant, oil, oxygen, etc.).

10. Noise, panel vibrations etc.

11. Inappropriate or incorrect use of hardware, fasteners, components, or methods of construction.

12. Incomplete or improper welding, riveting or bolting.

13. Lack of uniformity and symmetry where applicable.

14. Loose, vibrating abrading body parts, components, subassemblies, hoses, wiring harnesses or trim.

15. Improper body design or interface with the chassis that could cause injury during normal use or maintenance, and which fail to provide access to perform routine or mandatory repairs or maintenance on vehicle electrical and mechanical systems. In addition, the improper combination of options which by their combination and installation are inherently incompatible with regard to function or safety.

16. Sagging non-form fitting upholstery or padding, holes, tears, discoloration, etc.

17. Incomplete or incorrect application of rustproofing.

18. Visual deformities and equipment malfunctions.

19. Unsealed appurtenances or other body components, gaskets, etc.

20. In addition, any deviation from specification requirements or any other item, whether or not stipulated herein, that affects form, fit, function, finish, durability, reliability, safety, performance or appearance shall be cause for rejection.

▶ 4. QUALITY ASSURANCE PROVISIONS

4.1 RESPONSIBILITY FOR INSPECTION.

Unless otherwise specified in the contract, the contractor is responsible for the performance of all inspection requirements (examination and tests) as specified herein. Except as otherwise specified in the contract, the contractor may use his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to ensure supplies and services conform to prescribed requirements.

4.1.1 RESPONSIBILITY FOR COMPLIANCE.

All items must meet all requirements of sections 3 and 5. The inspection set forth in this specification shall become a part of the contractor's overall inspection system or quality program. The absence of any inspection requirements in the specification shall not relieve the contractor of the responsibility for ensuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling inspection, as part of manufacturing operations, is an acceptable practice to ascertain conformance to requirements, however, this does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to acceptance of defective material.

4.2 GOVERNMENT VERIFICATION.

Quality assurance operations performed by the contractor will be subject to Government verification at unscheduled intervals. Verification will consist of observation of the operations to determine that practices, methods and procedures of the contractor's inspection are being properly applied. Failure of the contractor to promptly correct product deficiencies discovered shall be cause for suspension of acceptance until correction has been made or until conformance of product to specification criteria has been demonstrated.

4.3 FIRST PRODUCTION VEHICLE INSPECTION.

When specified, the first vehicle produced under the contract shall be inspected by the contractor at his plant under the direction and in the presence of Government representatives. The purpose of the inspection shall be to determine vehicle conformance to the contract. Acceptance of the first production vehicle shall not constitute a waiver by the Government of its rights under the provisions of the contract.

4.3.1 VEHICLE WEIGHT.

The first production vehicle shall be weighed to determine the curb weight and distribution of the curb weight on front and rear axles. The total imposed loads on front and rear axles shall be computed by the contractor and verified by the Government, using the curb weight, the operator and passenger weight at each seating position at 80 kg (175 pounds) each and the payload required to provide the specified GVW. Except as specified in 3.2.6.1, the calculated imposed loads on the front and rear axles shall be compared to the suspension, axle and tire load capacity ratings to determine if these components are of adequate capacity to meet contractual requirements.

4.3.2 ROAD TEST.

The first production vehicle shall be road tested by the contractor without payload. The road test shall be for not less than 16 km (10 miles) at speeds up to 88 km/h (55 mph).

4.3.3 TRUCK BODY TREATMENT AND PAINTING.

A certification regarding the body cleaning, treating, prime painting and salt spray resistance testing, as required by MIL-HDBK-1223, shall be made to the Government representatives at the first production vehicle inspection. The manufacturer's records shall be available to verify that all wood requiring treatment in accordance with MIL-HDBK-1223 has been treated.

4.3.4 TYPE VIII REFRIGERATION UNIT TESTS.

To determine conformance to 3.5.8.1, the following tests shall be conducted. Certification from the body supplier may be accepted. Certification shall be based on test data or calculations.

4.3.4.1 COOLING TEST.

The entire body, without payload and with the rear doors open, shall be soaked for four hours in an ambient air temperature of not less than 38°C (100°F). The cooling capability of the van shall then be determined to verify conformance to 3.5.8.1. The vehicle body shall be continuously exposed to the 38°C (100°F) ambient air temperature during the test.

4.3.4.2 HEATING TEST.

When a diesel powered refrigeration unit is required, (see 3.5.8.3.3), the vehicle, without payload, shall be exposed for four hours to the ambient air temperature at the time of the test. The body

heating system shall be operated and the inside temperature shall be raised until a temperature differential between the inside and outside air reaches 33°C (60°F). With the heating system operating, the vehicle shall be driven for 30 minutes at a road speed of 88 km/h (55 mph) to test the capability of the system to maintain the 33°C (60°F) temperature differential.

4.3.4.3 AIR TRANSPORTABILITY VERIFICATION.

When air transportability is specified, the vehicle shall be inspected to determine that it conforms to the contractor's air transportability drawings and data as submitted to the Government for transportability approval. As a minimum, the following angles, dimensions and descriptions shall be checked against Government approved contractor's drawings and data:

a) Angle of approach
b) Ramp breakover angle
c) Angle of departure
d) Height, longitudinal location and identification of highest component on truck
e) Dimensions and locations of any significant projections on truck
f) Curb weight of each axle
g) Wheelbase
h) Front overhang
i) Rear overhang
j) Articulation of rear suspension, unloaded, each axle (curb weight)
k) Rear axle spacing
l) Axle rating, front, and comparison to 1 1/4 times (curb weight) load
m) axle rating, rear, and comparison to 1 1/4 times (curb weight) load
n) Suspension rating, front, and comparison to 1 1/4 times (curb weight) load
o) Suspension rating, rear, and comparison to 1 1/4 times (curb weight) load
p) If axle stops are to be removed for ramp loading on aircraft, verification that the driveline remains intact when cresting maximum ramp slope

4.4 FAILURE.

Failure of the first production vehicle to meet requirements of the contract shall be cause for the Government to refuse acceptance of all vehicles under contract until corrective action has been taken.

4.5 INSPECTION OF PRODUCTION VEHICLES.

The contractor's inspection system shall as a minimum ensure that the vehicle conforms to the physical and dimensional requirements and is capable of meeting performance requirements specified herein. For each vehicle under contract, the contractor shall make available to the Government, at the point of final acceptance, records acceptable to the Government indicating that the servicing and adjusting required by 3.4.26 have been accomplished. For civilian agencies, GSA Form 1455 or an approved equivalent form shall be used.

4.6 PRODUCT CONFORMANCE.

The products provided shall meet the salient characteristics of this standard, conform to the producer's own drawings, specifications, standards, and quality assurance practices and be the same product offered for sale in the commercial market. The Government reserves the right to require proof of such conformance.

▶ 5. PACKAGING.

5.1 VEHICLE PROCESSING.

The vehicle shall be processed for shipment from the manufacturer's plant to the initial receiving activity, in accordance with the manufacturer's standard commercial practice. When code XP is specified, vehicle is intended for export and all separable and pilferable items including, but not limited to Jacks, spare tires and wheels, mirrors, tarpaulins, etc., shall be boxed, banded, and secured to the vehicle in a manner to reduce as far as practicable the opportunity for theft. When direct consignee delivery is required, each fuel tank shall be filled with a minimum of 10 gallons of fuel.

▶ 6. NOTES.

6.1 INTENDED USE.

The vehicles covered by this specification are intended for general use by the Government in transporting personnel or cargo; for use in performance of the maintenance and construction tasks indicated; or for the mounting of special bodies or equipment. Agencies shall specify (see 6.2) unusual operating conditions, items and exceptions not specified herein.

6.2 ORDERING DATA.

Acquisition documents should specify the Federal Standard number and revision and the vehicle item number and option codes from a table and the schedule. The following is a guide to the requirements of Section 3 to assist ordering.

REF. PARA./ CODE	SUMMARY
3.1.1	
-	Identification of special requirements not contained in the standard.
3.1.1.1	
CPT	Identification of custom or federal standard 595 color for painting, if specified.
-	Exterior color, when closest manufacturer's standard paint color is acceptable. If no color is specified, a non-metallic light or medium color shall be selected by the manufacturer.
-	Exterior color selection after contract award, if specified.
TP	Multitone paint combination.
WLP	Wheels painted same as cab.
3.1.1.2	
MIL	Identification of appropriate military service for marking.
3.1.1.3	
SRP	Rustproofing, if specified.
3.1.1.5	
-	Wood treatment, MIL-HDBK-1223 if specified.
3.1.1.6	
RTH	Towing devices, if required on rear in addition to front (not available with types VI maintenance truck or VIII refrigerator van truck or with 3.1.1.11).
3.1.1.8	
TTP	Trailer towing package (pintle, etc.), if specified (not available with 3.1.1.11).
PH	Pintle height, 510 mm.
MTL	Trailer lighting cable, if specified.
3.1.1.9	
TBE	Electric trailer brakes controller
3.1.1.11	
HTGC	Hydraulic tailgate cart-stop
HTGX	Hydraulic tailgate extra capacity, 1365 kg (3,000 pounds).

REF. PARA./ CODE	SUMMARY
3.1.1.11.1	
HTG	Hydraulic tailgate, fold up type if required (not available with 3.1.1.6 or 3.1.1.8)
3.1.1.11.2	
HGTU	Fold-under type hydraulic tailgate, if specified.
3.1.1.11.3	
HTGR	Rail lift type hydraulic tailgate, if specified.
3.1.1.14	
BTC	Toolbox.
3.1.1.16	
STF	Staggered frame.
3.1.1.20	
CTIS	Central tire inflation system, if specified.
3.1.1.21	
ATR	Air transportability, (includes LTD), if specified.
3.1.1.22	
LTD	Lifting and tiedown provisions, if specified.
3.2.2	
CEC	California emission control, if specified.
3.2.6.1	
-	Gross axle weight ratings, if specific ratings are specified.
3.2.6.2	
MPR	Snowplow provisions, if specified.
3.4.1.1	
-	Optional, increased vehicle performance, if specified.
YD1-11	Optional diesel engines, if specified.
FJP	Operation on JP-4 and JP-8 fuels, if specified.
CNGD	Dual fuel CNG/Diesel

REF. PARA./ CODE	SUMMARY
3.4.1.2	
E5	Gasoline engine, if specified.
LPG	Propane engine, if specified.
CNG	Dedicated natural gas.
3.4.1.5	
ECF	Coolant filter.
3.4.1.8	
SC	Silicone rubber hoses, if specified.
3.4.1.9	
SEH(A)-(E)	Power plant heaters and fuel warmers, if required.
EH	Chassis manufacturers block heater.
3.4.1.9.1	
FFS	Heated fuel/water separator diesel only
3.4.1.10	
FFP	Fuel fired engine preheater for diesel engine driven vehicles, if specified.
3.4.2.3	
A14	Alternator capacity 145 ampere.
3.4.2.4	
-	Left-dip headlights, if specified.
DRLD	Daytime running lights - delete, if specified.
LED	Light emitting diode lights, if specified.
3.4.2.8	
VOL	Auxiliary 24-volt system with trailer receptacle, if specified.
3.4.3.1	
ASI	Air cleaner service indicator, if specified.
3.4.3.2	
FTC	Fuel capacity, 70 gallons
FTD	Fuel capacity, 100 gallons
FTE	Dual 100 gallon fuel tanks

REF. PARA./ CODE	SUMMARY
3.4.4	
VES	Vertical exhaust pipe
EPY	Engine exhaust pyrometer
3.4.4.1	
SKS	Spark arrester, if specified.
3.4.5.1	
T53, T66 or T75	Automatic transmission five speed (standard on Type IV, Class D, E, F)
3.4.5.2	
T5, T6	Manual transmission, if specified in lieu of automatic.
3.4.5.3	
PTS	Power operated PTO engagement, if specified.
3.4.7	
FHD	Heavy duty frame reinforcement, if specified.
FTR	Extended, tapered rear frame rails on type II trucks tractor, if required.
LM	Low profile chassis.
FFE	Front frame extension.
3.4.8	
AUXS	Auxiliary rear springs for class E, F, and G.
3.4.8.1	
SAR	Rear air suspension for class E or F, if specified. (Not available on type I chassis and type IV dump.)
3.4.9.1	
RA2	Two-speed axle, if specified. N/A with D1.
3.4.9.2	
D3	Traction control automatic, if specified.
D1	Traction control, driver controlled N/A with RA2.

REF. PARA./ CODE	SUMMARY
3.4.10	
HF	Wide base tires and wheels, if specified.
3.4.10.1	
MS	Mud and snow tires (rear axle), if specified.
SLP	Low profile tires, if specified.
3.4.10.2	
STC	Spare tire carrier, if specified.
VMS	Spare tire carrier, vertical mount (types II, III, and IV).
3.4.10.3	
STA	Spare tire assembly for front axle, if specified.
STB	Spare tire assembly for rear axle, if specified.
3.4.10.5	
AICE	Automatic tire chains, if specified.
3.4.11.3	
TBT	Brake controls for use from a towing vehicle, if specified.
3.4.11.4	
EDR, ECB, EXB, T1	Increased braking capability, if specified.
3.4.12	
COE	Cab-over-engine (tiltcab), if specified.
3.4.12.1	
DSS	Air ride driver's seat, if specified.
DSS2	Air ride passenger seat, if specified. (includes DSS)
3.4.12.2	
CC	Crew cab, if specified.
3.4.12.4	
SLP1	Sleeper cab (36 inch), if specified
3.4.14	
WN	Intermittent windshield wipers, if specified.

REF. PARA./ CODE	SUMMARY
3.4.16.1	
TJ	Spare tire changing tools, if specified.
3.4.19	
AAG	Air application gauge, if specified.
SK	Metric odometer, if specified
3.4.20	
RM3	Remote control curbside rearview mirror, if specified. (includes RM4)
RM4	Heated rearview mirrors, if specified.
3.4.22	
EHM	Engine hour meter, if specified.
3.4.23	
BUA	Back-up alarm, if specified.
3.4.24	
RACS	Cassette player, if specified.
3.4.25	
DA	Delete air conditioning, if specified.
3.4.26.1	
H4	Cooling system protection down to -47°C (-63°F), if specified.
3.4.27	
MHW	Front mounted winch, if specified. (class E, F and G only)
3.4.28	
FEX	Emergency Equipment.
3.4.29	
FPH	Placard holders.
3.4.30	
-	Display truck package, if specified.
3.4.31	
LSD	Synthetic Lubrication - Differential

REF. PARA./ CODE	SUMMARY
LST	Synthetic Lubrication - Manual Transmission.

Cab - Chassis:

3.5.1

CA1-CA8 Usable cab-to-axle requirements for type I chassis.

\- Load area and body type for subsequent mounting on type I chassis

Truck Tractors:

3.5.2

OSW Truck tractor full oscillating fifth wheel, if specified, by Military agencies.

3.5.2.7

ARW Truck tractor sliding air release fifth wheel, if specified. Not available with code OSW.

3.5.2.8

TWD Truck tractor wind deflector, if specified.

\- Semitrailer van height for truck tractor wind deflector, if not as specified.

3.5.2.9

\- Truck tractor hydraulic lift fifth wheel, if specified (not available with 3.5.2.7, 3.5.2.10, or 4x4 vehicles).

3.5.2.10

\- Truck tractor air lift fifth wheel, if specified (not available with 3.5.2.7, 3.5.2.9. or 4x4 vehicles).

3.5.2.11

AUXL Auxiliary lights for CPR and CPR1, if specified.

CPR Cab protection rack, if specified.

CPR1 Cab protection rack, w/ chain lock and tray, if specified.

REF. PARA./ CODE	SUMMARY

Stake Trucks:

3.5.3

BSR Stake truck swing center side racks, if specified.

3.5.3.4

BDF3 Apitong wood floor, if specified.

3.5.3.5

BDF or

BSF Stake bed steel plate floor - diamond tread (code BDF) or smooth (code BSF).

BDF2 or

BSF2 Heavy duty floor - diamond (code BDF2) or smooth (code BSF2)

3.5.3.6

BBS Front bulkhead, if required.

DBEM Delete side and end racks, if specified.

3.5.3.8

SAC Stake truck hydraulic crane, if specified.

Dump Stake Trucks:

3.5.3.9

BDS Dump stake and platform body, if specified (see 3.5.3.9).

3.5.3.9.2

\- Dump stake hoist capacity rating, if not as specified.

3.5.3.10

BTB Stake body tarp, bows and tiedowns, if specified.

3.5.3.11

BCS Cargo body (open top), if specified.

3.5.3.12

TSW Load securing straps and storable winch binders, if specified.

REF. PARA./ CODE	SUMMARY
Dump Trucks:	
3.5.4.1	
DHD	Heavy duty body
3.5.4.2	
CP	Dump truck extended cab protector, if specified.
-	Dump truck cab protector stowed in dump body, if required.
3.5.4.3	
ART	Tailgate air release, if specified.
3.5.4.4.2	
UN	Nested understructure, if specified.
3.5.4.8	
MPS	Reversible snowplow, if specified.
3.5.4.8.4	
MPP	Snowplow power angle moldboard, if specified.
3.5.4.9	
NAS	Dump truck sand and salt spreader tailgate, if specified.
NSP	Dump truck skid mounted sand and salt spreader, if specified.
3.5.4.10	
DBC	Delete dump bed cover, if specified.
Maintenance/Line Bodies:	
3.5.6.5.1	
AL	Aluminum Body.
3.5.6.5.2	
FG	Fiberglass Body.
3.5.6.5.3	
PCI	Compartment Paint Interior.

REF. PARA./ CODE	SUMMARY
3.5.6.5.4	
UPR	Pipe Rack.
3.5.6.5.5	
URH	Rope Hooks.
3.5.6.5.6	
URO	Overhead Racks with Ladder Clamps.
3.5.6.5.7	
USM	Side Mounted Ladder Racks.
3.5.6.5.8	
USS	Superstructure Body - (standard interior loadspace)
3.5.6.5.9	
USS2	Superstructure Body - (increased interior loadspace height)
3.5.6.5.10	
UTC	Spare Tire Carrier in Loadspace
3.5.6.5.11	
UTR	Telescoping Roof
3.5.6.5.12	
UVB	Vise Bracket and Pipe Rest.
Van Trucks:	
3.5.7.1.1	
FRP	Van body FRP/plywood side and end panels, if specified.
3.5.7.1.3	
BWD	Van body wind deflector fairing, if specified.
3.5.7.4	
-	Van body color of prepainted panels, if not white.
BR	Translucent roof.

REF. PARA./ CODE	SUMMARY
3.5.7.5	
CRP	Van body logistics posts, if specified.
3.5.7.7	
BRT	Van body interior rope ties, if specified.
3.5.7.8	
CRT	Van body interior cargo control tracks, if specified.
3.5.7.9	
BFA	Van body aluminum floor, if specified in addition to wood.
FLU	Forklift Reinforced Floor
3.5.7.11	
BDD	Van body double rear doors, if specified.
3.5.7.14	
BSD	Side door.
Refrigerator Van Trucks:	
3.5.8.1	
R35	Refrigerator unit heating capability, if specified.
3.5.8.2.3	
FLU	Fork lift reinforced floor, if specified.
3.5.8.2.6	
ROD	Refrigerator van full width roll-up doors, if specified.
3.5.8.2.6	
-	Gasoline in lieu of diesel engine driven refrigeration unit (furnished without cargo heating capability), if specified for gasoline engine driven trucks.
3.5.8.3.4	
RDO	Delete secondary power source of refrigeration unit.

REF. PARA./ CODE	SUMMARY
Miscellaneous:	
4.3	
-	First production vehicle inspection
6.1	
-	Unusual operating conditions or equipment
6.6	
PSM	Parts list(s) and shop repair manual(s), if specified.
PSMD	Parts and Services Manuals on Disk
PSM2	Parts and Services Manuals - Air Force
PSM3	Parts and Services Manuals - Air Force
6.7	
-	When statement of origin should be sent to office other than consignee.

6.3 PERFORMANCE PREDICTIONS.

SAE Truck Ability Prediction Procedure computations and computations for low speed and maximum geared speed will be required by the contract. The SAE J2188 Work Sheet, Appendix A, should include vehicle model number, engine model number, and vehicle type and class. Unless other conditions are cited in the contract, computations shall be made for normal atmospheric pressure, normal ambient air temperature, and still, dry air. The factors to be used in predicting truck ability (see 3.3.1.) are established in the procedures and tables contained in SAE J2188.

6.4 SUBJECT TERM (KEY WORD) LISTING.

Chassis, truck	Truck, commercial
Truck, dump	Truck, refrigerator van
Truck, stake	Truck tractor
Truck, van	

6.5 WARRANTY.

6.5.1 WARRANTY COVERAGE.

The contractor shall provide the chassis manufacture's commercial warranty and the commercial furnished equipment warranties against parts failure or malfunction due to design, construction or installation errors, defective workmanship, and missing or incorrect parts (6.5.4 exceptions) for a minimum period of 12 months, and 15 months for vehicles outside the (50) states of the United States and District of Columbia, from date of acceptance or 161,000 km (100,000 miles) of operation, exclusive of any authorized accumulated drive away mileage, whichever occurs first. If the contractor receives from any supplier or subcontractor additional warranty on the whole or any component of the vehicle, in the form of time or mileage, including any pro rata arrangements, or the contractor generally extends to its commercial customers a greater or extended warranty coverage, the Government shall receive corresponding warranty benefits. The warranty begins when the government accepts the vehicle from the contractor FOB point of origin/destination.

6.5.2 DOMESTIC USE.

When vehicles are used within the fifty States of the United States, the District of Columbia, Puerto Rico, and the Virgin Islands, the warranty shall include the furnishing, without cost to the Government (FOB contractor's nearest dealer or branch to vehicle's location or station), of new parts and assemblies to replace any that failed or malfunctioned within the warranty period. In addition, when the Government elects to have the work performed at the contractor's plant, branch, dealership, or with the contractor's approval (i) to correct the supplies itself; or (ii) to have them corrected by a commercial garage facility; the cost of the labor involved in the replacement of the failed or malfunctioned parts or assemblies shall be borne by the contractor.

6.5.3 FOREIGN USE.

When vehicles are used outside the fifty States of the United States, the District of Columbia, Puerto Rico, and the Virgin Islands, the warranty shall include the furnishing of new parts or assemblies to replace any returned to the contractor by the Government which failed or malfunctioned within the warranty period The replacement parts or assemblies shall be delivered by the contractor to the port of embarkation in the United States designated by the Government. The contractor will not be required to bear the cost of the labor involved in correcting defects in vehicles operated in foreign countries.

6.5.4 WARRANTY EXCEPTIONS.

Unless within the additional coverage under 6.5.1, the following items are considered normal maintenance and repair for which the contractor need not assume liability for reimbursing the Government regardless of the vehicle age or mileage.

(a) Abuse, negligence, or unapproved alteration of original parts
(b) Damage from accidents
(c) Brake and standard clutch adjustments
(d) General tightening, headlamp adjustments
(e) Wheel alignment or tire balancing
(f) Tires and batteries (if warranted by their manufacturers)
(g) Miscellaneous expenses such as fuel,towing, telephone, travel, lodging, or loss of personal property.

6.6 OPERATORS, SERVICING AND PARTS MANUALS.

The successful bidder shall furnish at least one operator's and maintenance handbook, including a handbook(s) for any furnished special equipment. An identification sticker, label, or plate shall be furnished on the vehicle; that will list the contractor name, point of contact, and phone number of contact. This point of contact will be the source of information for parts, part numbers, service, warranty, and answers to operating questions for the vehicle; including any furnished bodies and/or special equipment. The sticker, label, or plate shall be positioned so that the operator may locate and read it easily. When code PSM is specified, a parts list, or book, all shop repair manual(s) for the vehicle and equipment shall be provided.

When code PSMD is specified, the parts and service manual shall be furnished on disk readable from a PC.

When code PSM2 is specified, one operator's manual shall be packed with each vehicle. Two sets of maintenance and parts data along with any operation, maintenance and parts data for

mounted or specialized equipment, shall be furnished, regardless of the number of vehicles the consignee is receiving. Example: if 15 vehicles are shipped to a consignee, only two sets of the tech manuals mentioned above are shipped to the consignee; however, an operator's manual shall be provided for each vehicle.

When code PSM3 is specified, one set of technical manuals consisting of operating, maintenance, and parts, along with manuals covering any mounted equipment, shall be mailed within 15 days after contract award, prepaid, to the address specified below, prior to approval a Technical Order (T.O.) assignment. The package must include a DD Form 250. Mail to:

Warner Robbins ALC/LKCB
460 Second St., Suite 100
Robins AFB, GA 31098-1640

The approved manuals shall be identified by a T.O. number which will be furnished by WR-ALC/LKC within 45 days after issuance of the contract. The assigned Air Force T.O. number shall be printed, stamped, or otherwise marked on the cover sheet by the contractor prior to issue. When multiple manuals are furnished by the contractor, the Air Force may assign more than one T.O. number.

Within 60 calendar days prior to delivery of the first vehicle, two sets of technical manuals shall be mailed prepaid to:

Commander
78CS-SCSP
285 Cochran St.
Robins AFB, GA 31098-1623

Manuals will be delivered with DD Form 250 showing contract and MIPR number, T.O. number, and number of sets delivered. A copy of the DD Form 250 shall be mailed to:

WR-ASC/LKC
460 Second St., Suite 221
Robins AFB, GA 31098-1623

6.7 STATEMENT OF ORIGIN OR BILL OF SALE.

A manufacturer's statement of origin or bill of sale showing the applicable purchase order number is required for each vehicle procured under this specification. Unless otherwise specified, such documents shall be forwarded to the consignee mailing address.

Military Interest:

ARMY - AT
NAVY - YD, MC
AIR FORCE - 84, 99
ENGINEERS
DIA
DLA

Civil Agency Coordinating Activities:

AGRICULTURE
AAFES
COMMERCE
DC GOVT
EPA
ENERGY
GSA
INTERIOR
JUSTICE
PCC
POSTAL SERVICE
STATE
TRANSPORTATION
TREASURY
TVA
VETERANS

Preparing Activity:

GSA - FSS - FFAE